Minnesota Plant Press

The Minnesota Native Plant Society Newsletter

Volume 27 Number 1 **Fall 2007**

Monthly meetings

Thompson Park Center/Dakota Lodge
Thompson County Park
360 Butler Ave. E., West St. Paul, MN 55118
651-552-7559 (kitchen)

6 p.m. — Social period
7 – 9 p.m. — Program, society business

Programs

The MN NPS meets the first Thursday in October, November, December, February, March, April, May, and June. Check the website for more program information.

Nov. 1: "Effects of moose browsing on long-term forest succession on Isle Royale," by Dr. Peter Jordan, University of Minnesota. **Annual seed exchange** following the program. Package seeds in small envelopes; label them.

Dec. 6: Program to be announced. Check our website: www.mnnps.org

Do your holiday shopping at Terrace Horticultural Books

by Ken Arndt

Need a hard-to-find gift this holiday season? Join us Saturday, Dec. 15, between 10 a.m. and 3 p.m., on another Society outing to Terrace Horticultural Books.

Owner Kent Petterson will donate 20 percent of all purchases made by MN NPS members to the Society. A similar outing last winter resulted in a very nice donation to the Society. We thank Kent for opening that day and thank the members who purchased the books.

Terrace Horticultural Books is located at 503 St. Clair Ave., St. Paul 55102. For a preview of their selections and directions on how to get there, go to www.terracehorticulturalbooks.com

MN NPS website: www.mnnps.org
Blog: www.mnnpsblogspot.com

Easements to help owners protect rock outcrops

by Tom Cherveny, West Central Tribune, Willmar, Sept. 27, 2007. Reprinted with permission.

A project near Olivia, initiated by the Renville County Soil and Water Conservation District, aims to help landowners protect the unique scenery and environments of rock outcrops on their property. The project will compensate landowners for protecting the rock outcrops in a perpetual conservation easement, said Tom Kalahar of the [conservation district]. "It provides fair compensation for something that they would really like to have done," he said.

The new project is attracting interest from landowners in Renville and Redwood counties, despite the fact that there has been little done to advertise it, he said. The Renville County Soil and Water Conservation District is processing applications from four Renville County and three Redwood County landowners interested in placing rock outcrops in the easements. Kalahar said they will continue to accept applications into October. The Legislative Citizens Commission on Minnesota Resources has provided $470,000 for easements.

The protected lands will still be available to their owners for uses such as hunting. The conservation district and the DNR will provide staff to remove invasive species such as red cedar and sumac from the sites. They will work with the landowners in future years to continue to manage the rock outcrops to protect the unique native plant and animal populations found on them.

Kalahar said the project was proposed to serve two goals. First among them is the desire to protect the rock outcrops for future generations. They hold unique plant and animal species found nowhere else in the state, and their geologic features are also of special importance. The exposed granite bedrock is more than 3.5

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President's Column

by Scott Milburn

A great deal of behind-the-scene effort goes into the operation of our organization. This happens when members step up and volunteer their personal time for the betterment of the Society. For almost 10 years, Ellen and Chuck Peck have mailed each issue of the *Minnesota Plant Press*. They also have been mailing the new member packets. The Pecks have graciously served the Society and, after all of these years, will be turning over these duties. On behalf of the Society, I thank the Pecks and look forward to their continued participation.

Membership participation is crucial for the success of any organization. We are fortunate to have a diverse group of enthusiastic folks on the 2007 - 2008 board. We recently held our second board meeting with new members Peter Dziuk and Russ Schaffenberg. Peter and Russ bring their experiences and great ideas and are very welcome additions to the board.

We are now beginning our second year meeting at the Dakota Lodge in West St. Paul. There have been some questions as to why we are meeting there rather than at the Wildlife Refuge in Bloomington. Initially, we were informed that the facility at the Refuge was due for renovating. Then we learned the Refuge would no longer allow groups to hold meetings there dueto a cut in their budget from the federal government. We are happy to have a new home for the next few years and thank those on the board who help set up for each meeting. Attendance numbers have been great thus far.

Another issue is the need to form a social committee and find a chair for it. The hour before our scheduled meeting provides an opportunity for members and friends to mingle. If you can help with this, please contact our vice president, Shirley Mah Kooyman. In closing, I encourage everyone to enjoy the Fall colors. I look forward to seeing you at our next monthly meeting.

Conservation group needs helpers

The MN NPS Conservation Committee will launch a web page soon. Under the leadership of Committee Chair Beth Nixon, they are seeking members who can complete tasks related to developing the web page. These tasks include creating a compendium of state legislation related to native plant conservation and links nationally and locally to other organizations doing plant conservation.

The committee is also seeking:

- Members who want to be notified of letter-writing action items;
- A member to "monitor the monitor" for public notices of upcoming environmental reviews of state projects that may be worthy of letter-writing campaigns; and
- Member input on action items for this year.

Please contact mnconservation@comcast.net if you can contribute a little of your time.

Two nature center field trips planned

by Ken Arndt

Are you interested in learning how to identify plants outside of the growing season? The MN NPS will lead two field trips this fall that will focus on this challenging task.

Warner Nature Center

Join Jason Husveth Saturday, Nov. 10, at Lee and Rose Warner Nature Center for a morning of plant identification. Jason, a former MN NPS president and ecologist for Critical Connections Ecological Services, will lead participants through several unique plant communities on the property, which is typically closed to the public. The field trip will begin at 9 a.m. with a brief winter botany lecture inside the nature center. This will be followed by a hike until about noon.

Maplewood Nature Center

Saturday, Dec. 1, learn winter botany at Maplewood Nature Center from Scott Milburn, our current MN NPS president and botanist for Midwest Natural Resources. The event will begin indoors at 9 a.m. with a brief lecture on how to identify plants outside of the growing season. This will be followed by a hike to several diverse plant communities in this fine nature center.

For details and directions, visit our website (www.mnnps.org) and follow the link to the field trips page. Register on-line or at our general meetings throughout the year.

MN NPS Board of Directors

President: Scott Milburn, president@mnnps.org

Vice President: Shirley Mah Kooyman, vp@mnnps.org

Secretary: Sean Jergens, secretary@mnnps.org

Treasurer: Ron and Cathy Huber, treasurer@mnnps.org

Ken Arndt, board member, karndt@mnnps.org

Peter Dziuk, board member, pdziuk@mnnps.org

Linda Huhn, board member and program coordinator, 612-374-1435

Daniel Jones, djones@mnnps.org

Beth Nixon, bnixon@mnnps.org

Russ Schaffenberg, rschaffenberg@mnnps.org

Listserv Coordinator: **Charles Umbanhowar**, ceumb@stolaf.edu

Field Trips: fieldtrips@mnnps.org

Memberships: memberships@mnnps.org; 651-739-4323

Historian/Archives: Roy Robison, historian/archives@mnnps.org

Technical or membership inquiries: contact@mnnps.org

New member packets: To be announced

***Minnesota Plant Press* editor: Gerry Drewry,** phone, 651-463-8006; plantpress@mnnps.org

Rock outcrops

Continued from page 1

billion years old, and is among the oldest known rock in the world.

No less important, he said the project is an opportunity to do right for landowners. If we truly believe in the value of protecting the outcrops as a society, then we ought to compensate the landowners no differently than when we set aside lands for parks or other conservation purposes, Kalahar said.

The easements are available for property both inside and outside of the Wild and Scenic River corridor. Kalahar noted that lines drawn on maps in the 1970s largely determined which properties were included in the protected Wild and Scenic corridor along the Minnesota River in Redwood and Renville counties. Landowners who happened to have property inside the corridor discovered that hard rock mining was prohibited on those lands, but that they would receive no compensation for the limitation.

Kalahar said inquiries have come from landowners who like the idea of protecting the outcrops. This helps make it economically feasible for them to do so, he said.

The lands will be assessed this fall to determine the diversity of plants located on each. The assessment will be used to prioritize which lands to enroll. He said there is more land being offered than can be funded. He is hoping to return to the state to obtain funding to continue to enroll lands in future years.

Kalahar said it would be "irresponsible" to fail to protect the outcrops. He said that we have lost 95 percent of the wetlands and over 99 percent of the native prairie in this area, and he fears the same will be true of the rock outcrops if steps aren't taken today.

2007 membership list

The list is enclosed or will be e-mailed separately to all members.

Plant Lore

by Thor Kommedahl

What is dogbane?

Dogbane is *Apocynum androsaemifolium* (spreading dogbane) or *A. cannabinum* (hemp dogbane). It is in the dogbane family.

How did it get these names?

In Greek, *apo* means away and *kuon* is dog (*cynon* in Latin), meaning that these species were considered poisonous to dogs. It literally means "Away Dog." *Androsaemifolium* means that the leaves look like *Androsaemum*. And *cannabinum* means that its leaves look like hemp (*Cannabis*).

Where do these plants grow?

Both are shrub-like perennials native to Minnesota, with spreading dogbane being more frequently found in upland woods, whereas hemp dogbane is more in open fields. These species interbreed in nature, and the hybrids are sometimes named *A. medium*.

What do the plants look like?

Flowers are small bells, pink in spreading dogbane and white in hemp dogbane, arranged in terminal cymes. Seed pods (follicles) are three to eight inches long and in pairs. Leaves are egg-shaped and occur in pairs. The stems (one to four feet tall) are reddish and contain milky latex.

Does it have any medicinal uses?

Actually it is poisonous. Cymarin in plants is a cardioactive glycoside, poisonous to ruminants. Yet, the plant has been found to have anti-tumor activity. The Chickasaw and Choctaw Nations used root juice as a specific treatment for syphilis. Both dogbanes were listed in the *National Formulary* and in the *U.S. Pharmacopeia* until 1952 as a cardiac medicine. Plant extracts have been used as an emetic and diuretic.

Does it have any economic uses?

The fibers in the stem are finer and stronger than cotton thread and were used by Menomini Indians for bow strings. Stem fibers have been used in making rope.

***Apocynum androsaemifolium*, photo by Scott Milburn**

Seed harvest at Morris is a record

by J. B. Bright, trip leader and refuge operations specialist, Morris Wetland Management District

The weather cooperated Saturday, Sept. 22, making for an enjoyable time on the prairie. Nineteen volunteers turned out to hand-collect prairie wildflower and grass seed. In the process, they learned about district management and prairie ecology, while getting an "up close" experience with native prairie.

The site was a tract of remnant prairie on the Maki Waterfowl Production Area, located eight miles south of Hancock in Section 16 of Tara Township, Swift County. Some of the species harvested included: purple prairie clover, blazingstar, golden alexanders, prairie dropseed, prairie onion, snakeroot, and Virginia mountain mint.

The fourth annual seed harvest day was by far the most productive and successful event yet, as approximately 23 bulk pounds of seed were collected, with an estimated retail value of $11,000! Many thanks are owed to the volunteers, because this amount equals or exceeds the previous three years' collections combined. The seed will be used in native restorations on the district this fall and next spring.

Minnesota Native Plant Society
P.O. Box 20401
Bloomington, MN 55420

Fall 2007

Welby Smith receives member award

by Scott Milburn

Those who have visited the University of Minnesota herbarium on the St. Paul campus and viewed the Minnesota collection of vascular plants have seen Welby Smith's name continuously appearing. He has contributed greatly to the collection at the herbarium, and he is truly appreciated by those who understand his craft. Just by looking at some of the collections made by Welby, the care and appreciation for each collection can be seen.

Welby is a lifetime resident of Minnesota, having grown up on a family farm in Wright County. He headed to St. Cloud State University to study biology, a subject that had always interested him. He completed both his undergraduate degree (biology) and Master's degree (botany) there and then went to the University of Minnesota to start his Ph.D. It was there that Welby met other botanists who inspired him to learn as much as he could about plants.

Rather than continue pursuing his Ph.D., he accepted a job with the Minnesota Department of Natural Resources in 1978. He was given the task of exploring the best places in Minnesota, and he has been exploring ever since. In that time, Welby has increased our knowledge about Minnesota's flora with much devotion. He is probably best known for his book *Orchids of Minnesota*, which in turn has encouraged many to start exploring. He has also just written *Trees and Shrubs of Minnesota*, which is due out in early 2008.

Honorary lifetime membership in our Society is reserved for those who have provided exemplary service to the plant sciences, for outstanding work in plant conservation, or for 20 years of active membership. Less than 10 individuals have been awarded this in our 25-plus-year history, and perhaps none is more deserving than Welby. Welby is one of the founding members of the Society and has been active, holding almost every position and leading field trips. With all of Welby's contributions over the years, the board thought he deserved our highest award. It was presented to him at our 2007 symposium and was graciously received.

Welby enjoys botanizing in the northeast and southeast portions of Minnesota, but he is content with any natural remnant. When asked about his favorite plant, he indicated an interest in sedges, woody plants, and ferns, then said any plant that offers an intellectual challenge. He is a great source of information and fun to listen to. Welby has an ability to capture the attention of his audience when speaking about plants. Just as others inspired him, he inspires others in the subject. The Society is honored to have such a great member as Welby.

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Feb 7: "Biofuels: Threats and Opportunities for Native Plants," by Joe Fargione, regional scientist, The Nature Conservancy, Minnesota Chapter. **Plant of the Month** (also by Fargione): *Panicum virgatum* (switchgrass). **Announce slate of new board member candidates.**

March 6: "Rare Plants in Temporary Rainwater Pools on Bedrock Outcrops: Recent Discoveries on Some of Southwestern Minnesota's Most Scenic and Threatened Habitats," by Fred Harris, Plant Ecologist, DNR. (No POM since many plants will be covered in detail.) **Annual Meeting/Election of three new board members**.

April 5, 8:30 a.m. - 4 p.m.: Annual symposium, "The North Shore Highlands," Bell Museum of Natural History, University of Minnesota, Minneapolis. See article on page 3.

MN NPS website

For current information about MN NPS field trips, meetings, and other events, check the website: www.mnnps.org

Canoes help searchers in dwarf trout lily hunt

by Russ Schaffenberg

I first saw the rare dwarf trout lily in 2006 when I volunteered with the DNR Natural Heritage Program. I helped with the count in Nerstrand Big Woods State Park, close to the park headquarters, near the waterfalls — a gorgeous scene on a beautiful spring day. To stare at the emerging greenery on the forest floor all day puts me in a very happy place after a long winter. I guess when you linger a long while in nature and immerse yourself in it and leave other thoughts behind, you will sense and experience nature at a much deeper level of detail and sensation. I felt great satisfaction while driving home that day, glad spring was here, eager to plan more outdoor adventures.

I shared with Derek Anderson and Nancy Sather my love to canoe and kayak and that I had paddled past the dwarf trout lily SNAs on the Cannon River before. There are several SNAs along the Cannon, and it makes a great day-trip from the metro, whether you bike, rollerblade, paddle the river, or simply hike. If you choose to paddle, you don't even need an extra vehicle to shuttle between Cannon Falls, Welch and Red Wing, as you can just bike or skate back to the car on the scenic trail. I also shared that I could equip any plant search they had to do via boat.

They took me up on my offer. They had been studying maps, zeroing in on possible dwarf trout lily habitat on private land along the Straight River, which joins the Cannon near Faribault, and contacting landowners to get permission to search. The easiest way to access the sites was via the river, because these places were often far from a road and because some landowners preferred that we access via the river. A canoe trip was planned.

I met up with DNR staff members Derek, Sharon Goetz Hollister, and Amanda Plain at Medford City Park. We unloaded the gear and canoes, drove to our destination, left my vehicle, and returned. Derek, our leader, came well prepared with GPS and great maps. On larger rivers with larger bends, it's easy to navigate with a

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Meet Russ Schaffenberg

Russ is one of the newest members of the Society's board. He grew up in Mankato, amid a strong tradition of gardening, hunting, fishing and love of nature. But his hippie friends in college gardened organically, which greatly influenced him, and ever since then he has grown much of his own food and loves to cook.

With strong environmental values, he studied chemistry and biology and became good at plant identification, and still has his tattered *Britton and Brown* and *Thomas Morley*. But ultimately he became a chemist, first in the environmental field, then in the water purification industry. He was also a working musician and recently was inducted into the Minnesota Rock & Country Music Hall of Fame. He finally traded his drumsticks for a lake cabin in northern Wisconsin.

Russ is president of his lake association, writes their newsletter, does the lake monitoring and loves to canoe and kayak the nearby Wild and Scenic rivers. He retired early and finally had time to study the flora again, gaining inspiration, information and connections from the MN NPS. Now basically a homemaker, he has time to travel, enjoy nature and study the flora.

Updates to plant keys are available

Bruce Barnes has updated his Flora ID plant keys with added images, nomenclatural changes, etc. Contact him if you wish to get an update for $6 for shipping and handling. He is planning to bring out new, updated databases on an annual basis, with updates available around the first of each year.

Contact him at: Bruce S. Barnes, Flora ID Northwest, LLC, 731 NW 5th, Pendleton, OR 97801; 541-276-5547; FAX 541-276-8405; or flora@uci.net; or www.xidservices.com/FID

If you have not yet purchased a Minnesota interactive plant key through the MN NPS, contact Ron Huber at huber033@umn.edu. The cost is $70 to members who are up-to-date on their dues.

Minnesota Native Plant Society's purpose

(Abbreviated from the bylaws)

This organization is exclusively organized and operated for educational and scientific purposes, including the following.

1. Conservation of all native plants.
2. Continuing education of all members in the plant sciences.
3. Education of the public regarding environmental protection of plant life.
4. Encouragement of research and publications on plants native to Minnesota.
5. Study of legislation on Minnesota flora, vegetation, and ecosytems.
6. Preservation of special plants, plant communities, and scientific and natural areas.
7. Cooperation in programs concerned with the ecology of natural resources and scenic features.
8. Fellowship with all persons interested in native plants through meetings, lectures, workshops, and field trips.

MN NPS Board of Directors

President: Scott Milburn, scott.milburn@mnnps.org

Vice President: Shirley Mah Kooyman, shirley.mah.kooyman@mnnps.org

Secretary: Sean Jergens, sean.jergens@mnnps.org

Treasurer: Ron and Cathy Huber, ron.huber@mnnps.org

Ken Arndt, board member, ken.arndt@mnnps.org

Peter Dziuk, board member, peter.dziuk@mnnps.org

Linda Huhn, board member and program coordinator, 612-374-1435

Daniel Jones, board member, daniel.jones@mnnps.org

Beth Nixon, board member, beth.nixon@mnnps.org

Russ Schaffenberg, board member, russ.schaffenberg@mnnps.org

Listserv Coordinator: Charles Umbanhowar, ceumb@stolaf.edu

Field Trips: fieldtrips.mnnps@mnnps.org

Memberships: memberships.mnnps@mnnps.org; 651-739-4323

Historian-Archives: Roy Robison, historian-archives.mnnps@mnnps.org

Technical or membership inquiries: contact.mnnps@mnnps.org

***Minnesota Plant Press* Editor: Gerry Drewry,** 651-463-8006; plantpress.mnnps@mnnps.org

21st Prairie Conference

The 21st North American Prairie Conference will be Aug. 4 to 8 on the Winona State University campus, Winona. The theme is "The Prairie Meets the River." The conference will be part of the university's sesquicentennial celebration. Additional information is available at https://w3.winona.edu/events or by contacting Dr. Bruno Borsari at 507-457-2822. bborsari@winona.edu

Dwarf trout lily search

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canoe map, but the bends were so many and so small that we couldn't keep track with the map and had to check GPS along the way. Our targets were a number of parcels on either side of the river.

Rivers in southeastern Minnesota are prone to flooding because of the shape of the land and rapid runoff from fields. This disturbance creates zones of different vegetation, reflected in elevation. Zones vary from gravel, sand and clay — with opportunistic annuals and tough perennials — to rich, mature hardwood forest on the high ground, and a continuous gradient of high to low floodplain in between. There seemed to be a line in elevation above which the false rue anemone was abundant and below which there was none. Other species showed variable tolerance to flooding and/or were quicker to repopulate low ground. The common trout lily was scattered on the middle ground and abundant on high ground. We lingered at large patches, hoping we would find some dwarfs mixed in, looking for the telltale thread-like flower stalks.

We hopscotched our way down river — paddle, search, paddle, search — and had fun finding a bullfrog, interesting flotsam and skipping stones on the river during lunch break, but otherwise, no luck. About 42 known dwarf trout lily populations are found in three counties. Many of these small patches occur in groups close together and may be re-considered as single populations, so there really are very few populations. It had been about 10 to 15 years since the last really new population was found, so our chances were slim. Guided by the differences in vegetation, we realized that much of the land was too low and looked for higher ground, even just a small hill or hummock tucked in somewhere. By mid-afternoon we were down to the last few parcels. We planned our approach to one section, then spread out to sweep across the bottom towards a hillside.

On the final pass along the hillside, it looked promising — just the kind of scene *Gleason & Cronquist* describe: "rich woods, often on north slopes." Amanda found a skull; we thought it was a fox. We paused to speculate about it. Then, moments later and a few steps away, there they were! Eureka! With joy, we converged on the spot, then went back to get the flags we had carried all day without needing and this time had left behind. (Is it good luck to forget them?) We counted 152 blooming plants, most in one big patch and the rest in a smaller one. Then we splashed down a nice rapids just before our take-out and were tired but happy after a day of paddle, search, paddle, search.

Dwarf trout lily photo by Russ Schaffenberg

North Shore Highlands is focus of symposium

by Scott Milburn

This year's symposium will be April 5, again at the Bell Museum of Natural History. The focus will be on the North Shore Highlands Subsection. A brochure, with reservation form, is available at our website on the link for "Annual Symposium." The brochure will be mailed to our members in February. We have a great line-up of speakers on this fascinating portion of the state. I want to thank these folks from the Minnesota County Biological Survey for their help: Supervisor Carmen Converse; Lynden Gerdes, ecologist; and Lawson Gerdes, ecologist.

We are honored to have Professor Emeritus Dr. John Green, University of Minnesota-Duluth, start the day with a presentation on the geology of the North Shore Highlands (NSH). He will be followed by Chel Anderson, DNR, speaking about the plant communities of the NSH and Lynden Gerdes, DNR botanist, discussing rare plants of the region.

We will also focus on two other important components of the NSH flora. Dr. Jan A. Janssens, of Lambda-Max Ecological Research, will speak about the bryophytes, and Joe Walewski, of Wolf Ridge Environmental Learning Center, will speak about the lichens.

The symposium will conclude with a panel discussion on NHS conservation issues. Panel members so far include Lawson Gerdes; Jack Greenlee, plant ecologist, Superior National Forest; Mike Schrage, wildlife biologist, Fond du Lac Reservation Resource Management Division; and Jan Green, citizen conservationist/birder.

Registration cost, including lunch, is $40 for members and $50 for non-members. Vendors must register and also pay $50 for a table. Mail registrations by March 25 to: MN NPS Symposium Registration, c/o Shirley Mah Kooyman, 4520 Terraceview Lane N., Plymouth, MN 55446.

ATVs and the environment

by Matt Norton. This is an abstract of his presentation May 3, 2007.

ATVs, off-highway motorcycles, and mudder trucks — collectively known as off-highway vehicles (OHVs) — have an inherent capacity to damage the environment severely in numerous ways, regardless of how well behaved the rider. OHVs cause erosion, sedimentation, and wildlife disturbance.

OHVs are extremely effective at spreading non-native weed species, which invade and destroy native plant communities. They readily pick up weed seeds from roadways and often travel into the backcountry, depositing these seeds in new locations. ATVs' knobby tires also destroy or beat down vegetation and expose soil, making a more favorable seedbed for these weed seeds. In short, because of their engineering (extreme power, aggressive tire tread, ability to drive anywhere), OHVs cause tremendous damage to vegetation, wildlife, lands, and waters of the state.

Renegade OHVers do damage that is more severe and extensive than any other outdoor recreational activity. They are more likely to intentionally disobey signs, gates, and berms, either in order to flout the law, or in the search for wetlands (mudholes), steep slopes (hill-climbs), and other "challenge areas." Riders generally do not see a problem with using natural features on the landscape to test the engineering limits of their machines. According to the DNR's 2001 OHV Recreation Planning Tool Report, "riders neither understand nor appreciate the possible connection between their riding and environmental damage. Respondents think mud, natural water hazards, and hill climbs are all appropriate uses in the forest."

Providing more designated trails does not automatically prevent these inherent environmental problems. Rather, when trails are provided in proportions that outstrip limited resources available for state enforcement and monitoring, those added trails expose more areas to both inherent and renegade damage from OHVs.

Finally, the management situation likely will get worse. The "open-unless-posted-closed" management system ensures trail proliferation and guarantees environmental damage. The DNR is ensuring this outcome north of U.S. Hwy. 2, where 74 percent of state forest acres are located. On "managed" state forests, the DNR establishes the presumption that all *de facto* trails, regardless of whether they were created legally, are thereafter open to motorized recreation unless and until the land manager undertakes the substantial process of closing the user-created trail and then posts it as such.

President's column

by Scott Milburn

We had a great 2007 with several notable items, such as adding Peter Dziuk and Russ Schaffenberg to the board, hosting a great symposium on the Prairie Coteau, providing informative programming, and enjoying many opportunities to see our flora in the field. As we ended 2007, our account was hovering around $25,000. This represents quite an achievement for an all-volunteer organization such as ours.

Since the Society is not a for-profit business, the board decided to put a portion of last year's revenue to a worthwhile cause. We considered several options that were in keeping with our mission. We felt the best use of our monies would be toward something capable of reaching as many people as possible, thus furthering our cause. As many of you know, *Orchids of Minnesota* by lifetime member Welby Smith is out of print. Near the end of this past year, the board unanimously approved the donation of monies to the Minnesota Department of Natural Resources, specifically earmarked for the printing of a second edition. Our treasurer, Ron Huber, provided a check for $2,700 to the DNR. This will not cover all of the costs, but it is a significant contribution. Our understanding is that this second edition will be in paperback, with newly revised distribution maps, along with additional information pertaining to habitat, plant description and commentary. The Society will receive mention for this donation in the future publication.

Board member elections will be in March, and I encourage those who are interested in serving or have someone in mind to serve on the board to contact our vice president, Shirley Mah Kooyman. An initial slate of candidates will be presented at our February meeting, and nominations will be open until we vote at the March meeting.

We have an exciting year of programming ahead. The topics we are exploring should be of great interest to the Society. As these programs are set, we will be posting them on the website and in the *Plant Press*. I would also like to remind folks about the Annual Symposium, which is discussed on page 3.

We have changed our e-mail addresses for key contacts. We had been receiving a great deal of spam, so we changed our addresses to reduce this problem. Instructions on how to contact us via e-mail are provided on the website.

This leads me to one last item — we need more feedback from our membership. It is often difficult to gauge how we are doing, and feedback would be useful. Please e-mail your comments to me, and I can present them to the board. With that, I would like to wish everyone well this winter, knowing that spring will be here soon.

Explore the Herbarium, a hidden state treasure

by Anita F. Cholewa, Ph.D., curator of the herbarium

The University of Minnesota Herbarium — plants, algae, fungi and lichens, previously under the direction of the Department of Botany/Plant Biology, was formally incorporated into the Bell Museum of Natural History in 1996. It has become a hidden state treasure.

***Cryptogamic* Section**

The collections of algae, fungi, lichens, and mosses are one of the most comprehensive in the nation, numbering over 145,000 lichens, over 60,000 fungi, 50,000 mosses, and 13,000 algae. Important collections include J. Tilden's algae from the Pacific Northwest coast and South Pacific islands, E.W.D. Holway's rusts of North and South America, M.E. Palm's collection of Minnesota slime molds, and the best collection of Minnesota's fleshy fungi, notably those of D.J. McLaughlin, M.E. Palm, and M. Weaver.

The lichen collection comprises the best representation of national park and national forest lichens and has an excellent representation from China and Sonora, Mexico (primarily Clifford Wetmore's collections), along with the collection of the American Bryological and Lichenological Society. The collection includes Bruce Fink's Minnesota lichens, G. Llano's collections, and S.K. Harris' New England lichens, and there is a very good representation of the European lichen flora.

Significant moss collections include those of J.M. Holzinger from Minnesota, R.M. Schuster's Minnesota liverworts, and the Bescherelle European collection. This section also houses the cereal-rust repository collection of the U.S. Department of Agriculture.

Botanical Section

The botanical collection numbers over 600,000 vascular plants, approximately 25,000 slides of spores/pollen, and a small seed collection of approximately 2,000 lots. The representation of Minnesota's flora is unparalleled, with over 160,000 specimens collected throughout Minnesota's history by L. Moyer, E. Nielson, O. Lakela, J.W. Moore, W.R. Smith, and many others.

The assemblage of historic flora of the Upper Midwest, including the Dakotas, Wisconsin, and southwestern Ontario, is among the best in the U.S. There is an excellent collection of circumboreal and arctic flora due to past research interests of E.C. Abbe, W.S. Cooper, D. Lawrence, and their students.

Additionally, there is an excellent collection of historic Pacific island flora, through the efforts of J. Tilden, A.A. Heller, and J.W. Moore, and a collection of early Amazonian flora by H.H. Rusby and R. Squires as part of the early exploration (1895-1896) of the Amazon region by the Oronoco Company Limited (of Minnesota). J.W. Congdon's collection (over 9,000 specimens) of early California plants (including Yosemite National Park) and approximately 7,000 specimens of early western U.S. and tropical Asian flora acquired through J.H. Sandberg's exchanges are other significant collections.

The primary emphasis of the museum is to build and preserve a core series of collections representing the flora and fauna of the Upper Midwest, to be a permanent record of regional biodiversity. The museum's collections are also an important part of the graduate program in bio-systematics at the University of Minnesota in that the collections act as a source of examples for educational training and as a source of data for research hypotheses. Thus, the collections also seek to preserve representative examples of worldwide diversity, to preserve collections of importance to the research of curators and students and government agencies, and to act as sources of data for scientific study.

If you would like to be part of this exciting but hidden resource and have some time during the day, consider volunteering a few hours a week by helping prepare specimens or providing data entry services. If interested, contact one of the curators: Dr. Anita F. Cholewa, chole001@umn.edu; Dr. Dave McLaughlin, davem@umn.edu; Dr. Imke Schmitt, schm2109@umn.edu; or Dr. George Weiblen, gweiblen@umn.edu.

Dakota County, DNR protect 130 natural acres

Almost 130 acres of prairie on two properties south of Hastings have been protected this year. Dakota County paid $638,000 for conservation easements; the DNR paid an additional $50,000.

This is the second-largest natural area preserved in the county's Farmland and Natural Areas program, according to Al Singer, supervisor. The $20 million program began in 2002 and is expected to be completed this year.

Singer said the county worked closely with Friends of the Mississippi River, and the two families owning the land will continue to work with that organization to restore their land.

Paul and Kari Curtis own 69 acres with rolling grasslands and remnants of an oak savanna. Gene and Carol Almquist own 59 acres with oak, maple-basswood forest and converted grassland. Both areas are on Hwy. 61.

Harvesting of medicinal plants raises concerns

by Erica Fargione, herbalist. This is an abstract of her talk at the Oct. 4, 2008 MN NPS meeting.

The harvest of plants for medicinal uses is as old as the use of plants for food. People have used plants for medicines in every culture in the world. Plants are the best and cheapest chemists we have for our health. It is imperative that we protect the plants, because if we lose our valuable medicinal plants, we will have nowhere else to turn. Plants are more than medicine for humans. Plants clean the air and water, produce our oxygen, feed the animals, heal the animals, and their beauty enriches our lives. We need to be stewards of this richness and understand our role as humans and the effects we have on the natural environment.

A particular concern is our harvesting of plants for medicine and the sustainability of our harvesting. To address the impacts on plant populations, the World Conservation Union IUCN Medicinal Plant Specialist Group, along with WWF-Traffic, have been working on international standards for the sustainable wild collection of medicinal and aromatic plants (ISSC-MAP). The catalyst for these standards was the concern that many plant researchers, herbalists, conservationist and others have for the plants that are now threatened because of both market demands and habitat loss. Currently, worldwide, 10,000 to 15,000 MAPs are threatened. 64 MAPs are listed on CITES (Convention on International Trade in Endangered Species), including two native Minnesotan species — Goldenseal (*Hydrastis canadensis)* and American ginseng (*Panx quinquefolium)*.

What makes medicinal and aromatic plants special? The diversity of uses — teas, essential oils, medicines, food, cosmetics, hair care products, and spices. Harvesting demands on many plant species are great. The demand on plants for medicinal purposes is a big part of this demand. Here are some figures about the medicinal herb market.

- The global market for medicinal herbs is $60 billion annually.
- $17 billion was spent on herbal medicines in United States in 2000.
- In 2002, one in five U.S. adults used natural products for health.

Worldwide, 70 - 90 percent of all MAPs in the marketplace are wild-harvested. Only 900 plant species are cultivated worldwide. There are many reasons for this. Many of these plants have difficulties growing in cultivation, the market fluctuates so much that to invest in the cultivation is risky, the demand is usually ahead of the market so that there is no time to develop cultivation techniques, not much is known about how to successfully cultivate the plants, the income from harvesting is a secondary income for the harvesters who also may not own land, and the wild varieties of plants are considered better medicine. Wild harvesting will continue to be the main source of medicinal plants.

What makes a plant susceptible to over harvesting?

- Life cycle: slow growing, seed production and viability;
- Small population size;
- Narrow genetic variability;
- Part harvested: root, seed, flower, bark;
- Explosive demands: When a new study comes out to state the benefits of a plant, then the demand skyrockets;
- Wholesale price: When the price rises, so does the harvesting.

The new standards now in place look at each species and its needs. There is no single standard. Each plant is looked at to ascertain what a sustainable harvest for that species is. The IUCN has researchers in four countries, working with harvesters and companies marketing the herbs to develop species-specific standards. They are also trying to develop ways to certify and market sustainable harvests, much like organic certification.

As consumers, we can look at where our plants come from — look at tea boxes, hair care products, tinctures, massage oils, perfumes, cosmetics, dietary supplements. Many of these plants come from the wild. Wouldn't it be nice to know if their harvest was sustainable?

Consumers also need to know the right ways to use herbal medicines. Many herbal medicines are marketed to promote sales. They are touted as wonder cures with health benefits that aren't real. The use of medicinal plants by herbalists is based on traditional uses of plants. Herbalism is complex, and plants have specific uses. We cannot get our health education from the people trying to sell product — the market is not an advocate for your health.

As conservationists and stewards of plants, we can be mindful of the changing market. A plant may someday become a very important medicine. Be aware of what plants are being marketed and the possible demands this may put on the wild populations.

The issues facing our natural ecosystems are vast. Destruction of habitat, invasive species, over harvesting, and climate change, all have their effects on the plants. When we talk about and tackle these issues through research, legislation, and working together, we are building a better future for both the plants and people. We need to be able to pass on the richness of plants to the next generations.

Field Trips for 2008

by Ken Arndt

The Society is planning another exciting year of field trips. Stay tuned to our website for details. Look for another winter botany trip around the metro in late February or early March, followed by spring wildflowers in April and May. We plan a follow-up to this year's symposium with a weekend field trip to the North Shore Highlands in late June. Other trips will include another year of work at Pioneer Park in Blaine, prairie hikes in out-state Minnesota, a canoe trip on the St. Croix, and possibly a train ride in Wisconsin.

We are planning one or two trips a month, depending on field trip leader availability. If anyone you know is interested in leading a trip, or if you have suggestions as to where to go on a trip, e-mail me at ken.arndt@mnnps.org. We are always looking for additional field trip leaders and co-leaders to take us to the many fantastic areas around the region and state.

Epilobium angustifolium, photo by Peter Dziuk.

Minnesota Native Plant Society

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Phone (home)_____**(work)**_____

E-mail_____**e-mail newsletter? Yes__No__**

Membership category (New___Renewal___)

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$15	Family (two or more people at same address)
$ 8	Student (full time)
$ 8	Senior (over 62 or retired)
$20	Institution

The membership year starts Jan. 1. To join, fill in this form. Make your check payable to Minnesota Native Plant Society. Bring your check and the form to a monthly meeting, or mail them to: Minnesota Native Plant Society, P.O. Box 20401, Bloomington, MN 55420.

Plant Lore

by Thor Kommedahl

What is fireweed?

Fireweed is *Epilobium angustifolium*, in the evening-primrose family (Onagraceae), and native to Minnesota.

How did it get its name?

Epi comes from the Greek meaning *upon* and from *lobos* meaning *pod*, referring to the way flowers appear to grow on the seed pod — it's the way that the corolla is positioned on the ovary. *Angustifolium* is Latin for *narrow leaf,* which has given this species another common name, willow herb, because of the resemblance to willow leaves. Because it occurs on fire-desolated areas, it is called fireweed.

Where does it grow?

Most frequently, fireweed grows in clearings on moist soils, rich in humus, often after fires, mainly in northern, wooded parts of the state. It rapidly invades disturbed sunny sites.

What do plants look like?

Plants are perennial, 3-7 feet tall, with coarse, rhizome-like roots. Four pink-purple, roundish petals make up each flower. The tiny seeds are borne in reddish, long and narrow seed pods (capsules), 300-400 seeds per capsule. The simple leaves are alternate on reddish stems.

Is it poisonous or medicinal?

It has not been reported poisonous. American Indians made a paste of peeled roots for treatment of burns, sores, and boils. A leaf tea was drunk for bowel problems, and a leaf paste was applied for mouth ulcers. Leaf extracts have been shown to be antibacterial.

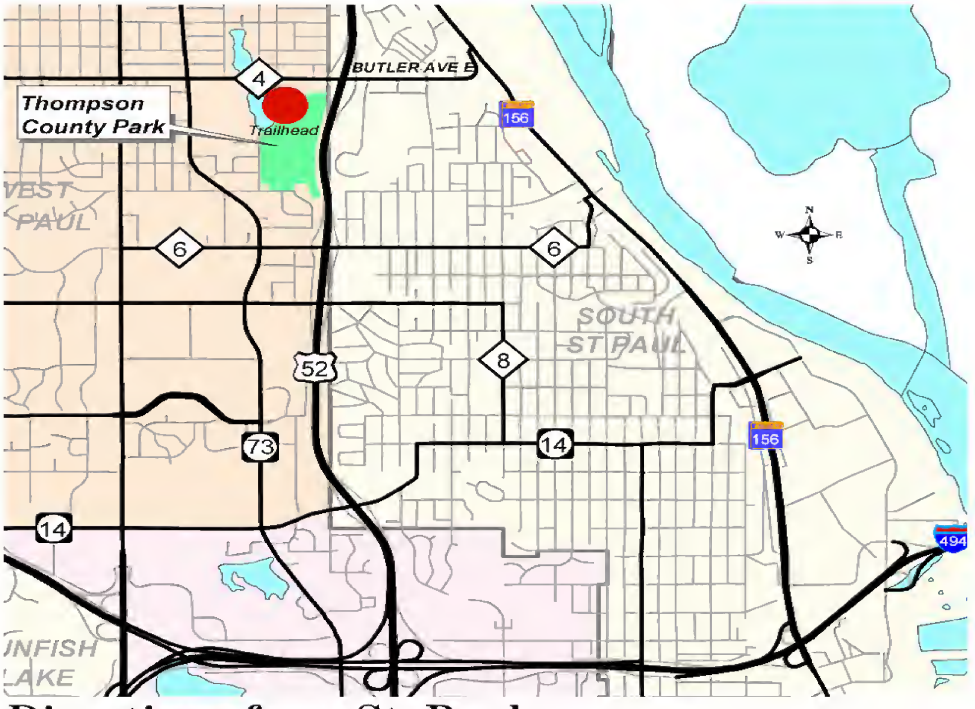
Has it any economic or other uses?

Northwest Indians used stem fibers to make fish nets and twine. Because plants are high producers of nectar, bees and other insects are attracted to it. It is not often grown in gardens because it becomes an aggressive weed.

Minnesota Native Plant Society
P.O. Box 20401
Bloomington, MN 55420

Winter 2008

Thompson County Park:
360 Butler Ave East, West St. Paul, MN 55118



Directions from St. Paul:
MN Hwy 52 to Butler Ave. exit in West St. Paul.
West on Butler Ave.; East 0.2 miles to Stassen Ln.

Minnesota Plant Press

The Minnesota Native Plant Society Newsletter

Volume 27 Number 3 **Spring 2008**

Monthly meetings

Thompson Park Center/Dakota Lodge
Thompson County Park
360 Butler Ave. E.,
West St. Paul, MN 55118
651-552-7559 (kitchen)

Programs

The MN NPS meets the first Thursday in October, November, December, February, March, April, May, and June. Check the website for more program information.

6 p.m. — Social period

7 – 9 p.m. — Program, society business

May 1: "Under the Cart Wheels: Natural Communities and Native Plants Along the Pembina Trail," presented by Nancy Sather, DNR ecologist. **Plant of the Month:** Blanket flower (*Gaillardia aristata).*

June 5 "Music of the Leaves: How Plants Arrange Their Leaves for Most Efficient Photosynthesis," by Clarence L. Lehman, adjunct professor, Department of Ecology, Evolution and Behavior, University of Minn. **Native Plant Sale** following program.

Prairie conference website is changed

The website for the 21st North American Prairie Conference, which will be held at Winona State University Aug. 4 to 8, has been changed. For information or to register, go to http://bio.winona.edu/NAPC/index.htm

MN NPS website

For current information about MN NPS field trips, meetings, and other events, check the website: www.mnnps.org

Plants are indicators of wetland quality

by Michael Bourdaghs. wetland biologist, Minnesota Pollution Control Agency. This is an abstract of his talk at the Dec. 6, 2007 MN NPS meeting.

The Minnesota Pollution Control Agency (MPCA) has worked for over 10 years to develop a wetland biological monitoring program in support of the state and federal "no net loss" wetland policy. Biological monitoring is the use of biological community measurements to assess the condition (i.e., deviation from a natural or least disturbed state) of the resource. In this case, we measure plant communities to assess wetland condition. This is an effective approach, as plant communities can integrate multiple human impacts to wetlands over space and time in predictable patterns.

Our primary indicator is called the Index of Biological Integrity or IBI. An IBI is a multimetric index — meaning that it consists of a number of separate metrics that when combined produce a very robust index of wetland condition. Each metric is selected primarily based on its response to human-caused wetland stress, such as hydrologic alteration or excess nutrient loading. To date, IBIs have been developed for depressional marshes statewide. We have successfully applied our IBIs in a number of areas, including the Wetland Health Evaluation Program volunteer monitoring group (www.mnwhep.org); a wetland quality survey conducted in the Redwood River watershed; and wetland assessment under the impaired waters section of the Clean Water Act.

Looking to the future, the MPCA, in cooperation with a number of other state and federal agencies, has developed an overall wetland monitoring strategy. As part of the strategy, we have begun a statewide status and trends survey, where wetlands are randomly selected and assessed with IBIs. The survey will give us for the first time the ability to measure the overall condition of depressional marshes in Minnesota. In addition to the survey, we are continuing to develop other monitoring

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President's column

by Scott Milburn

The Minnesota Native Plant Society has recently begun our 27th year. Perhaps our best accomplishment is that we operate entirely as a volunteer organization. We rely on our members for every task, from the financial details to the organization of the social hour before every monthly meeting. Great work is being done by our members. From our field trip coordinator Ken Arndt to our membership coordinator David Johnson, we rely on their efforts. As many of you know, Ken has been in charge of field trips for several years. Under his tenure, we have had the opportunity to explore Minnesota and have been able to reach out to new members. This task involves hard work, dedicated time, and a great deal of coordination.

Prior to every monthly meeting, paid members receive notification of the meeting. These postcards are prepared, stamped and mailed by David Johnson, who is also in charge of membership. This is quite a task, and we appreciate the effort. Volunteering is worthwhile and beneficial to advancing the Society. I ask our members to think of ways they can contribute in the future.

I would also like to point out the great effort by the symposium committee. Turnout for this year's symposium was great, and the feedback was quite positive. We are grateful for the excellent presentations and the panel discussion. We hope that folks were able to learn something new and to take with them an appreciation for one of the most amazing places in Minnesota.

On a related topic, we have built up a reserve of money over the past few years due to the symposia. As noted in my last column, we donate a portion of our funds to support various projects or groups that further the mission of the Society. This can be a challenge, because there are quite a few ways to spend our money. The board has been diligent in evaluating projects, viewing each donation as an investment. We recently funded two special projects. The first was purchasing 20 plant field guides for the Como Park High Woodland Project. The second was providing partial funding for busing kids to nature centers for the next three years.

We are also fortunate to have a great relationship with the Bell Museum of Natural History and thank them for all of their help at the symposium. In closing, I hope that everyone has a chance to enjoy the Minnesota Spring and please share your enthusiasm with others.

Conservation Actions

by Beth Nixon

Readers of this newsletter are presumed to share a passion for wild places and what they stir in the heart, be it an aesthetic sense, spiritual strength, or playfulness and creativity. This past year the MN NPS responded to a call to ensure that some semblance of this appreciation of wild places is brought to children living in Ramsey County. The public school funding gap left out busing for field trips, eliminating environmental education at area nature centers. For the next three years, our Society will provide $300 per year for field trip busing. St. Paul Audubon Society will do the same.

The Conservation Committee is developing a member Action Alert e-mail list for letter writing. You are not obligated to write every time you receive an alert, but we hope that once or twice a year you can quickly respond to an alert with a letter. Talking points will be provided. Go to the website and contact the Conservation Committee, or sign up at the next monthly meeting.

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Historian-Archives: Roy Robison, historian-archives.mnnps@mnnps.org

Technical or membership inquiries: contact.mnnps@mnnps.org

***Minnesota Plant Press* Editor: Gerry Drewry,** 651-463-8006; plantpress.mnnps@mnnps.org

Waterfest is May 17

Lake Phalen's shoreline restoration will be celebrated May 17 during Waterfest 2008 at Phalen Park Pavilion, St. Paul. The event will include rain garden tours, watershed information and a native plant give-away. Search "waterfest" at www.co.ramsey.mn.us for details.

Rare plants found in pools on rock outcrops

by Fred Harris, plant ecologist, Minnesota County Biological Survey, Minnesota DNR. This is an abstract of his talk at the March 6, 2008 MN NPS meeting.

Temporary rainwater pools on rock outcrops in our prairie region have a unique flora for Minnesota. The two main areas of rock outcrops in the prairie region are crystalline bedrock exposures in the Minnesota River Valley and Sioux Quartzite outcrops in the inner portion of the Prairie Coteau (Pipestone and Rock counties). Sioux Quartzite exposures also occur on the outer margins of the Prairie Coteau in Cottonwood County.

Ephemeral rock outcrop pools vary from small, one-foot diameter puddles in bedrock depressions to pools of 25 feet across. All of these pools are at least eight to 10 inches deep, last for at least one to two months, and dry up by late June in most years. These ephemeral pools lack competition from the dense cover of wetland graminoids (e.g. *Carex* sp.) present in more permanent pools on outcrops.

Temporary pool species germinate and rapidly grow during the short duration of the wetland, then typically change morphology from aquatic to terrestrial forms that persist for a few weeks while stranded in drying mud after surface waters have disappeared. The plants then persist the rest of the year through extreme heat and drought as seed, spores, or other perennating parts in dried mud deposits in the rock depressions until the pools refill with rainwater the next spring.

In the early 1980s, Welby Smith described these unusual rock pools and their flora and recommended several pool-specialist species with few records in the state for designation as state listed rare species. Also at that time, Emily Nietering completed a Master's thesis to locate many populations of these rare plants in the Minnesota River Valley. More recently, fairly systematic surveys by botanists of the Minnesota County Biological Survey (MCBS), have added to our knowledge of the species of rock pool habitats in the Minnesota valley and the Prairie Coteau, and relocated several species last recorded in the early 1900s. Rare, rock-pool specialist species include the following.

Water hyssop (*Bacopa rotundifolia*) — This small scroph occurs mostly in small rock depressions in the Minnesota valley, with a few records from Sioux Quartzite pools on the Coteau. Most of the available habitat for this species has been examined, and a total of approximately 20 populations of this species have been located in the state since the early 1900s. This species appears to be fairly rare in Minnesota, and MCBS staff recommend upgrading its status from Special Concern to Threatened.

Wolf's spikerush (*Eleocharis wolfii*) — Prior to MCBS, this overlooked sedge species had been collected in just three locations in the state, all prior to 1968 and from habitats vaguely described on specimen labels as "moist areas." In 1997, MCBS discovered this species growing on the edges of rock pools at Carver Rapids Wayside in the Minnesota valley. In the last two years, MCBS located several populations on the margins of Sioux Quartzite pools on the Coteau.

Mudwort (*Limosella aquatica*) — This small, annual scroph is uncommon throughout its circumboreal range because it is limited to ephemeral pools. It occurs as a thin, floating-leaved aquatic form that reverts to a more succulent-leaved terrestrial form when stranded in mud. MCBS located numerous new populations of this species on the Prairie Coteau in the last two years.

Hairy water clover (*Marsilea vestita*) — Prior to MCBS, this aquatic, heterosporous fern was last recorded in Minnesota in 1938 at Pipestone National Monument. In 2007, MCBS documented several new populations of this species on Sioux Quartzite pools in Pipestone and Rock counties. Upright, terrestrial forms persist in drying mud where they produce sporocarps. Seeing this tiny plant is really a matter of being in the right place at the right time.

Prairie quillwort (*Isoetes melanopoda*) — In Minnesota, this aquatic, heterosporous fern ally is a northern disjunct from the rest of its range in the United States. Prior to MCBS surveys, the species had been known from Pipestone National Monument and Blue Mounds State Park. In 2007, MCBS located several new populations of the species, including a large population at the new Touch-the-Sky National Wildlife Refuge in Rock County.

Pygmy weed (*Crassula aquatica*) — This tiny succulent plant in the *Crassulaceae* had been recorded once in Rock County in 1945. In 1983, several deep-water plants of the species were discovered in Namakan Lake in Voyageurs National Park. In 2007, two individuals of the dwarf, terrestrial form of this species were found stranded on mud in Rock County. This plant also occurs in vernal pools in California, where it was found to perform the crassulacean acid metabolism (CAM) mode

Continued on page 5

How do moose affect northern forest ecology?

Lessons from Isle Royale National Park

by Peter A. Jordan, Department of Fisheries and Wildlife, University of Minnesota. This is an abstract of his talk at the Nov. 1, 2007 MN NPS meeting.

Background

Isle Royale National Park in Lake Superior has long been famed not only as a beautiful and biologically diverse wilderness, but also for the intensively studied, long-term dynamics of wolves and moose there. Ecologically, however, documenting how these two elements interact does not provide a full understanding of this ecosystem, because the forage-vegetation segment must be included as well.

We have been measuring woody plants and the impact of moose upon them since the 1960s and are now connecting those data to trends in the moose and wolf populations that have been tracked by others — along with our estimating winter moose numbers from pellet counts.

I joined the long-term moose-wolf project in the 1960s to monitor the animals, but also began establishing permanent plots on which upland shrubs and trees were inventoried, along with how these were affected by the foraging of moose (as well as snowshoe hares). This sampling system was gradually expanded into an island-wide network of plots wherein many relevant variables are re-measured annually, along with some less-often as needed.

The issues

Moose feed primarily on woody plants, taking leaves and new twigs of deciduous species during the growing season, then their dormant twigs plus the foliage of some conifers during the rest of the year.

Density of moose at Isle Royale has long been higher than in most other northern regions of the world where they occur. They first arrived on the island in the early 1900s, and by the 1920s had grown to several thousand on this 204-square-mile island, causing conspicuous damage to the forests.

As we measure and interpret long-term ecological effects, the question arises, have moose caused the forests on Isle Royale to become far different in composition and/or structure than those on the adjacent mainland where moose are either not present or at much lower densities?

Plant diversity at Isle Royale

For students of native plants, it's interesting that, as a habitat for plants, the island supports a considerably greater diversity of species and forest types than similar-sized areas on the surrounding mainland. For example, orchid species here number 32 (as of 1993), and there are a number of relict species associated with West Hudson Bay plus the far West.

The cold, but winter-long open, waters of Lake Superior provide more moderate temperatures year round, particularly underlying more cool and damp summers. Its topography includes sharp, parallel ridges and depressions, plus swamps and bogs, along with numerous inland lakes.

Briefly, the major forest types include northern-hardwood sugar-maple and yellow-birch; extensive mixed stands of white birch, quaking aspen, balsam fir and white spruce; boreal forests of balsam fir; patches of jack-pine/black spruce; and extensive northern white-cedar in lowlands. Moose forage heavily on most of the common broad-leaf tree and shrub species, but only on one common conifer, balsam fir.

Impacts of browsing by moose

Moose impacts on common, widespread deciduous species are most severe on quaking aspen, white birch, mountain ash, mountain maple, serviceberry, cherry species, and beaked hazel; and somewhat less so on yellow birch, sugar maple, Canada fly honeysuckle, and bush honeysuckle; but almost nil on thimble berry, speckled alder, and all bog shrubs. Probably most critical is the stripping of deciduous leaves during the growing season, being more damaging than removal of twigs from those same plants in winter. One rather rare species, the highly preferred, big-leaf aspen, appears vulnerable to complete extirpation from the island by moose.

Severe impact on conifers involves only two species — balsam fir, which would be the most abundant tree were its reproduction not so heavily suppressed, particularly at the western end, and American yew, which has been reduced to tiny, very short twigs without ever bearing "fruit." White pine, only sparsely present, shows moderately heavy browsing on saplings, but scattered individuals are regularly outgrowing the moose. Cropping of conifers in winter does involve removal of productive foliage, more akin to summer leaf stripping than winter twig removals. White and black spruce and jack pine, plus junipers are essentially never used. Red pine, very rare there, is apparently not used much if at all.

Long-term effects upon forests

Moose browsing has suppressed reproduction in most upland tree species along with the most common conifer since the late 1920s, when the recently arrived moose reached an unusually high number. The overall effect has been to alter composition and structure of much of the island's forest, an effect that can only be seen as mature trees that were present before moose arrived eventually die out, but are

not being replaced by their own or other palatable species, as would normally occur.

Successful escape of highly palatable trees occurred only once in the 20th century. That was after a very large fire in 1936, followed by re-vegetation by birch and aspen so widespread that moose could not suppress the saplings. Otherwise, inability of young trees to escape the reach of moose has led to openings in the canopy, forming what we call "spruce-moose savannas."

In these savannas, most woody plants remain as hedged shrubs, while herbage becomes abundant, as in meadows. This affords moose prolonged access to browse, but the plants eventually decline in size and productivity due to chronic, year-round (for deciduous ones) cropping. Meanwhile, slowly but surely, white spruce, being totally unpalatable and free of competition from other woody species, occupies the site, eventually dominating the canopy. This creates a habitat of no value to moose other than as cover.

When, after many years, the spruce reaches mature size and high density, it becomes subject to wildfire. However, the time lapse since preferred browse species died out may be so long that their roots and seeds may no longer be present, hence leaving the post-fire vegetation with little preferred forage for moose as normally occurs where mixed stands burn. There has not been time for observing whether this will occur at Isle Royale, i.e. a couple of centuries, but it is certainly a relevant question for researchers at Isle Royale.

The island, as a national park, cannot be managed to produce vegetation that favors certain valued animals, as might be done on private or Forest Service land, In contrast, the island is a setting where diverse or unexpected trends in natural ecosystems can be studied without concern for a particular end result (as long as said trends are not caused by us humans).

Should you visit the west end of Isle Royale, no doubt stopping at the Windigo Ranger Station, a good impression of moose effects can be seen at a moose-exclosure located close-by. Constructed in 1979 where prior vegetation was similar to that outside the exclosure today, you can appreciate that as soon as moose were excluded, long-hedged firs, aspens, and other preferred hardwoods grew quickly, reaching their nearly full height within 15 or so years, while the vegetation outside has remained as before — a savanna. Around the outside, the mature firs and most mature white birch present in 1979 have since died and fallen.

Note: A power-point with colored graphics was used for this talk. For a copy, contact Peter at pajordan@umn.edu

Tip of the season

by Beth Nixon

"It won't hurt if I just dig one." Whether digging wild orchids on private property or in public places, taking one is a bad idea. Many of us love to own things of beauty and pleasure. Orchids seem to foot that bill for native plant lovers. We must be mindful that their beauty is beholden to like kinds, other orchids, mossy surfaces, undescribed networks of subterranean hyphae, the ecology of rotting matter — a symbiology of mystery we can never create on our windowsills and gardens. Choose not to extract the mystery and awe from wild places. Cultivated orchids are commercially available, but remind youself and others to check sources before purchasing. Search for a meadow full of wild orchids that can only bring beauty as a collective whole. Enjoy them, but take only pictures.

Rock-pool plants

Continued from page 3

of photosynthesis while it is a submerged aquatic plant (as do species of *Isoetes*).

Mud plantain (*Heteranthera limosa*) — This species in the *Pontederiaceae* was previously known from only two locations in Minnesota. MCBS documented two new populations of this species in rock outcrop pools sustained by runoff and groundwater seepage in Rock County.

Slender plantain (*Plantago elongata*) — This tiny, annual, stemless plantain is a western species that reaches the easternmost edge of its United States range in southwest Minnesota. Previously known from one recent and two old collections in Minnesota, MCBS documented just one new population in spite of much searching.

Though more populations of these rare plants have been located in recent years, they are confined to a very specific habitat with a very limited range in Minnesota. Furthermore, the persistence of the native flora on many rock outcrops in Minnesota's prairie region is threatened from overgrazing or rock mining. Efforts to protect these special habitats have included public land acquisition, environmental review of proposed mines, and a recent and successful program to purchase perpetual conservation easements in Renville and Redwood counties.

Public awareness and concern about the plight of these places have been instrumental for furthering the cause of protecting these habitats in the Minnesota River Valley. It appears that there is somewhat less public awareness about the unique outcrop flora in the inner Prairie Coteau region. Continued public education about these places and assistance for landowners who would consider protection options should be a priority.

Birds need native plants

"Bringing Nature Home: How native plants sustain wildlife in our gardens," by Douglas W. Tallamy, is published by Timber Press.
Book review by Joel Dunnette

I'm a nature nut and enjoy native plants for themselves and for their embodiment of our place in the world. I started liking native plants for the wonder and variety of interesting insects they attract and support. But I now have another reason to plant, maintain and encourage the use of native vegetation.

In "Bringing Nature Home," Dr. Tallamy explains in an entertaining way how the diversity of our native plants supports a much wider variety and volume of insects than non-native plants.

Why should people care about this? Well, although more people enjoy birds than insects, the availability of an abundance and variety of insects is critical to birds as they raise their young. Baby birds eat a lot — and what they eat is mostly insects.

Gardens of exotic flowers are starving the wild birds so many of us love. Yards of mowed grass, with a few non-native shrubs, are no place to raise a bird family. Native plants have evolved to live with native insects. Each species has its own kinds of insects that live on and with it. These insects not only use native plants, but do so without destroying them.

Native plants support production of two to five times more insect food than do non-natives. Non-native flowers are unfamiliar to our insects and may be "pest free," but what many people call pests are essential to raising young birds. In fact, most insects are not harmful to humans or crops. We asume guilt by association, so most people try to kill nearly every insect they see. This harms the birds we love.

If we want a world filled with wonder and a variety of creatures, and we continue to take up nearly all productive land with our houses and shopping malls, then we need to provide the native plants that are essential for the survival of the species we value.

This book is full of useful information, but is also fun to read. Dr. Tallamy is an entomologist who truly loves nature and clearly communicates that love. If you care about birds even a little, you will enjoy reading this book.

Field trips planned

by Ken Arndt

We have a great line-up of field trips this summer. Due to limited registration, all of the field trips are for MN NPS members only, except the May trip to Barn Bluff in Red Wing. That trip is open to the public. For more detailed information on any of the field trips or to register for a trip, go to the field trip page of our website (www.mnnps.org). You can also register at our general meetings.

On April 26, at 1 p.m., Barr Engineering Senior Ecologist and MN NPS board member Daniel Jones will lead a hike in **Nerstrand Big-Woods State Park** near Northfield. Participants will view the early spring ephemerals of this maple-basswood community and get to brush up on their woodland plant ID with Daniel.

"Walk with Thoreau" in **Red Wing** May 24. Writer Dan Dietrich and naturalist Bruce Ause will lead this trip, which is sponsored by the Anderson Center in Red Wing. This event is free and open to the public. The day will begin at 9 a.m. in the main gallery of the Anderson Center with brunch and a brief talk by Dietrich on Thoreau's trip to Red Wing. This will be followed by a walking tour of Barn Bluff from 10:30 a.m. to 12 noon. Led by Dietrich and Ause, the tour will retrace Thoreau's exploration of the bluff and locate the many plants and flowers noted in his journals and letters.

The weekend of June 7 and 8 will be a return trip to the **Prairie Coteau** region of southwestern Minnesota with DNR Botanists/Plant Ecologists Fred Harris and Nancy Sather. From rock outcrops at Touch the Sky National Wildlife Refuge to calcareous fens at Sarah Mason Wildlife Management Area and a few other sites between, participants will have a close look at many different plant communities. Surveys for the prairie moonwort *(Botrychium campestre)* and small white lady's slipper orchid *(Cypripedium candidum)* are also planned.

On July 19, we will go north to George Crosby Manitou and Split Rock Lighthouse State Parks with DNR Botanists/Plant Ecologists Chel Anderson and Lynden Gerdes, to follow up this year's symposium topic, the **North Shore Highlands**. This all-day hike will take society members to the interior forests of the north shore and down to the shore of Lake Superior itself for a look at the many different plants found in this part of northern Minnesota.

Saturday, Aug. 2, Steve Eggers, senior ecologist for the St. Paul District Corps of Engineers, will lead a canoe trip in **Weaver Bottoms**, along the Mississippi River in southeastern Minnesota. Members will canoe into the bottoms, where American lotus and cardinal flower will be in bloom, nine-foot tall wild rice stands will grace the river, and a diverse assemblage of emergent, floating and submergent aquatic vegetation will be seen.

Plant Lore

by Thor Kommedahl

What is starflower?

Starflower is *Trientalis borealis*, in the primrose family, a common spring flower native to Minnesota woodlands.

How did it get its names?

Trientalis in Latin means "a third of a foot" because it averages about four inches tall; *borealis* means "of the north," and the plant is appropriately called northern starflower. Because the petals resemble a seven-pointed star, it is named starflower. Some refer to this plant as a "plant of sevens" because it usually has seven petals, seven sepals, seven anthers, and sometimes even seven leaves. Plants with flower parts in sevens are rare.

What does the plant look like?

It is a four-inch tall perennial with rhizomes and tubers (one to four per plant). The four to seven simple leaves appear at the stem tip in a whorl without petioles, or very short ones, and are slender and conspicuously veined. Usually single, sometimes two to three, white flowers with five to nine, but usually seven, petals per flower appear from May to June. Pollination is by native bees. Fruits are berry-like capsules splitting into five sections with many tiny seeds. However, asexual reproduction by tubers is more important than reproduction by seeds.

Where do these plants grow?

They are understory plants in rich woods and bogs in conifer-hardwood and boreal forests in North America and are abundant in patches.

Are they medicinal or poisonous?

The tubers are neither edible nor poisonous and have no medicinal properties.

Is it a garden plant?

Gardeners shy away from this plant in gardens because plants aren't showy enough, have a short blooming time, and go dormant in mid-summer. Starflower is susceptible to smut caused by Urocystis trientalis, and voles prefer to eat infected over noninfected plants.

***Trientalis borealis* photo by Peter Dziuk**

Wetland quality

continued from page 1

methods. Chief among these is the Floristic Quality Assessment (FQA). FQA relies on the Coefficient of Conservatism which is a numerical rating of an individual species' affinity to natural habitats. FQA may allow us to move beyond depressional marshes and assess all the different wetland types in Minnesota.

For more information on the MPCA wetland biological monitoring program, please visit our webpage at: www.pca.state.mn.us/water/biomonitoring/bio-wetlands.html

Native Plant Sale is June 5

by Ken Arndt

It is time to get ready for this year's MN NPS native plant sale at our June 5 meeting. This annual sale helps raise money for the Society. We encourage members to divide or propagate their own native plants and donate them to our sale.

We will hold the sale outside of Dakota Lodge on the patio area that overlooks Thompson Lake, as we did last year. We ask that all plant material arrive by 6 p.m., so our volunteers will have time to get the sales area set up. The sale will take place after our speaker's presentation. All members and non-members will be allowed to participate. When the plant sale begins, volunteers will be first to select plants, followed by those who donated plant material, then by other members, and finally by visitors.

We ask that only native plants from the region (Minnesota/western Wisconsin) be included in the sale. No cultivars (horticultural selections) should be brought to the sale (e.g. 'Goldstrum' black-eyed Susan or 'Gateway' Joe-Pye-weed). Plants should come from your own property or other private property with that owner's permission, not from public property. Do not bring any plants dug without permission.

Place the plants in typical nursery containers with adequate water and soil. Label them with both common and scientific names. Prices will be marked by volunteers. We will have plant guides to help with labeling.

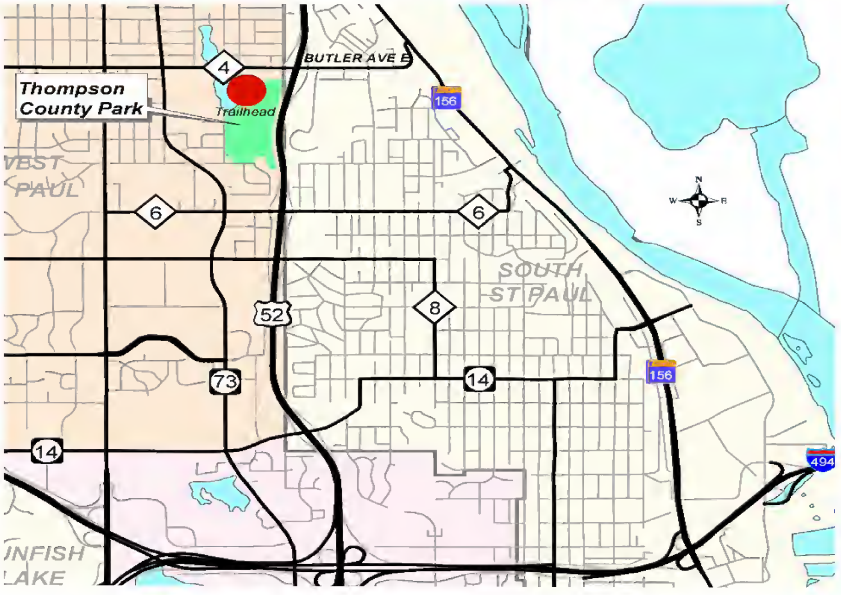
Try to dig your plants at least two to four weeks before the sale, especially if you are dividing your plants. That way the plants have time to get through transplant shock.

A few volunteers are needed to help with setting up the sales area and assisting members with their plants. To volunteer, contact Ken Arndt at ken.arndt@mnnps.org

Minnesota Native Plant Society
P.O. Box 20401
Bloomington, MN 55420

Spring 2008

Thompson County Park:
360 Butler Ave East, West St. Paul, MN 55118



Directions:
Take MN Hwy. 52 to the Butler Ave. E. exit in West St. Paul.
Go west on Butler 0.2 miles to Stassen Lane.
Go south on Stassen Lane to Thompson County Park.

Minnesota Plant Press

The Minnesota Native Plant Society Newsletter

Volume 27 Number 4 **Summer 2008**

Monthly meetings

Thompson Park Center/Dakota Lodge
Thompson County Park
360 Butler Ave. E.,
West St. Paul, MN 55118
651-552-7559 (kitchen)

Programs

The MN NPS meets the first Thursday in October, November, December, February, March, April, May, and June. Check the website for more program information.

6 p.m. — Social period

7 – 9 p.m. — Program, society business

Oct. 2: Program and Plant-of-the-Month to be announced.

Nov. 6: Program to be announced. **Seed exchange** to be held following the program.

Dec. 4: Program and Plant-of-the-Month to be announced.

Feb. 5: Program and Plant-of-the-Month to be announced.

Mar. 5: Program and Plant-of-the-Month to be announced.

Prairie conference is Aug. 4 - 8 in Winona

The 21st North American Prairie Conference will be held at Winona State University Aug. 4 to 8. For information or to register, go to http://bio.winona.edu/NAPC/index.htm

MN NPS website

For current information about MN NPS field trips, meetings, and other events, check the website: www.mnnps.org

The mystery of the elms in the Kandiyohi forest

by Mark Stennes, plant pathologist with S & S Tree Specialists, and Lee Frelich, research and associate director of the University of Minnesota Center for Hardwood Ecology. This is an abstract of their presentation at the April 3, 2008 MN NPS meeting.

An unusual forest dominated by elms, especially rock elm (*Ulmus thomasii*), but with some American elm (*Ulmus americana*) and red elm (*Ulmus rubra*) in central Minnesota, just south of the town of Kandiyohi was highlighted. This is also the only old growth elm forest we have seen, with trees up to 250 years old. A lush ground layer is present, probably because the deer herd is kept at eight to 10 deer per square mile. The site also has archaeological and historical significance with artifacts from Native American and European settlements and the first house built in the area. Also present is "Capitol Hill" between the tracts of forest, which was at one time slated to be the site of the Minnesota State Capitol.

Stennes talked about Dutch elm disease and the normal epidemiological model that should have resulted in the near complete destruction of this forest in the 25 to 30 years that the pathogen has been present on the site. All three elm species that dominate the site are normally susceptible, but the mortality due to Dutch elm disease is abnormally minimal. The probability of natural genetic resistance appearing in all three species on one site at one time, without evolutionary exposure to the pathogen, is fundamentally zero, so how are the trees surviving? There is certain to be a combination of factors, but pests/parasites of the insect vector is potentially one, while fungus competition, suppression and/or

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Constitutional amendment would aid environment

Wildlife habitats are among areas to be protected if Minnesota voters pass the Clean Water, Land and Legacy Amendment to the State Constitution Nov. 4.

The amendment, which was discussed in the State Legislature for more than 10 years, would increase the state sales tax 3/8 of 1 percent, generating about $276 million per year for 25 years.

The new revenue would be divided as follows:

- 33 percent for water quality;
- 33 percent for wildlife;
- 19.75 percent for arts funding;
- 14.25 percent for parks.

The Legislature passed the proposed amendment in February. Constitutional amendments do not need the governor's approval, but go directly to the voters. A "yes" vote on more than half of all ballots cast in the November election is necessary for an amendment to be passed. Blank ballots are "no" votes.

Former Sen. Bob Lessard, DFL-International Falls, started the campaign for hunting and fishing funds in the late 1990s. The original proposed amendment was similar to one passed in Missouri in the 1970s that has provided dependable revenue in that state. The federal government has mandated that states clean up their waters, and this amendment would provide funds to do that. Arts funding was added during the legislative debates to broaden support for the amendment.

The proposal is backed by groups representing environmentalists, hunters, anglers and the arts. Opponents include the Taxpayers League of Minnesota, which says the tax increase is "bad fiscal policy."

Minnesota Native Plant Society's purpose

(Abbreviated from the bylaws)

This organization is exclusively organized and operated for educational and scientific purposes, including the following.

1. Conservation of all native plants.
2. Continuing education of all members in the plant sciences.
3. Education of the public regarding environmental protection of plant life.
4. Encouragement of research and publications on plants native to Minnesota.
5. Study of legislation on Minnesota flora, vegetation, ecosytems.
6. Preservation of special plants, plant communities, and scientific and natural areas.
7. Cooperation in programs concerned with the ecology of natural resources and scenic features.
8. Fellowship with all persons interested in native plants through meetings, lectures, workshops, and field trips.

MNNPS Board of Directors

President: Scott Milburn, scott.milburn@mnnps.org

Vice President: Shirley Mah Kooyman, shirley.mah.kooyman@mnnps.org

Secretary: Sean Jergens, sean.jergens@mnnps.org

Ken Arndt, board member, field trip chair, ken.arndt@mnnps.org

Peter Dziuk, board member, peter.dziuk@mnnps.org

Daniel Jones, board member, daniel.jones@mnnps.org

Beth Nixon, board member, conservation committee chair, beth.nixon@mnnps.org

Erika Rowe, board member, erika.rowe@mnnps.org

Russ Schaffenberg, board member, russ.schaffenberg@mnnps.org

Treasurer: Ron and Cathy Huber, ron.huber@mnnps.org

Linda Huhn, program coordinator, 612-374-1435

Listserv Coordinator: Charles Umbanhowar, ceumb@stolaf.edu

Field Trips: fieldtrips.mnnps@mnnps.org

Memberships: memberships.mnnps@mnnps.org; 651-739-4323

Historian-Archives: Roy Robison, historian-archives.mnnps@mnnps.org

Technical or membership inquiries: contact.mnnps@mnnps.org

***Minnesota Plant Press* Editor: Gerry Drewry,** 651-463-8006; plantpress.mnnps@mnnps.org

Reminder:

Do not take plants from the wild. It is against the law to take plants from public property. Enjoy them where they are. Plants can be taken from private property only with the permission of the property owner.

Kandiyohi forest

Continued from page 1

disease of the pathogen is another. However, something bigger and certainly more complicated from an ecological point of view is happening in this unique elm forest.

Recent work with elm cultivars has shown that there are several genetically controlled defensive mechanisms that the trees can employ against the Dutch elm disease pathogen, and, although very rarely, can combine and occur in American elm at levels high enough to impart a substantial level of tolerance. 'Princeton' and 'Valley Forge' are two cultivars of American elm that are becoming available in the trade and can be fairly characterized as tolerant of Dutch elm disease.

Frelich talked about past and future significance of this forest. It might be a relict of a much more extensive forest that, as indicated by the paleoecological record, covered millions of acres in southern Minnesota, Wisconsin, Iowa, and Illinois 9,000 years ago. As the climate warmed towards the mid-Holocene optimum (7,500 years before present), the elm-oak forest largely disappeared. It was likely replaced by savanna and prairie as fire frequency increased in the warming climate.

Then the climate began to cool, and remaining elm forests were replaced with sugar maple as it migrated west. However, three tracts of Kandiyohi forest were on peninsulas or surrounded by lakes so that the prairie fires may not have reached them during the warm period, and also sugar maple did not quite make it to the area during the period of cooling climate. Thus the Kandiyohi elm and oak forest could have remained as a relict from ancient times. Studies of sedimentary deposits would be necessary to confirm this hypothesis, since it is also possible that the elm forest disappeared for a while and then came back.

In addition to rock, red and American elms, the Kandiyohi forest also has hackberry (*Celtis occidentalis*), American basswood (*Tilia americana*), green ash (*Fraxinus pennsylvanica*), Kentucky coffeetree (*Gymnocladus dioica*), bur oak (*Quercus macrocarpa*) and bitternut hickory (*Carya cordiformis*). All of these species have a maximum abundance in eastern Kansas, which is the same climate Minnesota may be headed for by the end of the 21st century, if climate mitigation is not successful. The Kandiyohi forest is therefore an ecosystem blueprint for forests that might exist or be created in much of Minnesota in a future warmer climate.

Annual plant sale goes on in spite of severe weather

"It was a dark and stormy night," but 40 dedicated members came to the 2008 plant sale and brought or purchased plants. The event was held in the entry area of Dakota Lodge.

There were no auction plants this year. Proceeds were $450. Last year's total was $842.

Ken Arndt was committee chair; Dave Crawford was the expert who identified plants and priced them.

Dave Crawford and Linda Huhn, program coordinator, explain the plant sale logistics. Photo by Richard Johnson.

Youth groups are collecting one million acorns

The Million Acorn Challenge is a five-year effort by Great River Greening to restore oak savanna communities across the Twin Cities by planting a million acorns by 2010. Youth groups in grades six to 12 are invited to help them reach this goal by collecting acorns.

The group that collects the most acorns between Aug. 18 and Sept. 17 will win $500 in cash prizes and eco-adventures. The prizes will be awarded at the Great Weigh-In and Planting Party at Afton State Park on Sept. 20.

The Million Acorn Challenge is open to school, faith-based, community, and neighborhood youth groups, as well as Boy Scout and Girl Scout troops.

Acorns can be collected from Aug. 18 through Sept. 17 on public or private property, but participating youth must have permission from the landowner before they remove acorns from any site.

Great River Greening has approval from the City of Saint Paul Parks and Recreation Division to collect in Saint Paul public parks; groups that collect in these parks will receive a collection permit once they register. Groups collecting outside this area will receive a permission request letter to use when contacting city or county landowners.

Pre-registration is required by Aug. 1. Contact Mark Turbak at 651-665-9500, ext. 11, or e-mail mturbak@greatrivergreening.org.

Introducing Erika Rowe, MN NPS board member

Erika Rowe , the Society's newest board member, is a plant ecologist with the DNR's Minnesota County Biological Survey. She has worked for the DNR since 2001 — five of those years with MCBS. The focus of her current work has been on native plants and plant communities of west-central Minnesota.

She currently lives in South Minneapolis. Erika grew up in St. Paul and then spent eight years exploring and living in California, Colorado, and Utah. Ultimately, this Western wanderlust motivated her to move back to the Midwest and study what she loves most: natural resources, ecology and conservation.

Erika has been a member of MN NPS for almost one and a half years. She decided to become a board member because she felt she wanted to take it one step further and be a part of this growing society of varied and remarkable individuals, and help the Society continue to grow to its finest potential.

Phenology data being collected

The USA National Phenology Network is facilitating systematic collection and free dissemination of phenological data from across the United States. Their primary purpose is to support scientific research concerning interactions among plants, animals, and the lower atmosphere, especially the long-term impacts of climate change. Additional information, including local lists of plants they are studying, is on the network's website, www.uwm.edu/Dept/Geography/npn/mission.html

Thor Kommedahl receives lifetime membership award

by Gerry Drewry

In appreciation of his years of service to the Society and his work with native plants, Thor Kommedahl was awarded a lifetime membership in the Minnesota Native Plant Society April 5, during the symposium.

Thor joined the Society in the early 1990s, when he learned about the young organization. Because he had edited other newsletters, he was soon asked to edit the Minnesota Plant Press. He changed it from a mimeographed or copied collection of unedited articles to a professional-looking newsletter. He served as editor through 1998.

Since then, Thor has proofread every issue of the newsletter. He has been especially helpful in catching misspellings of Latin names and errors involving botanical rules, botanical capitalization and grammar.

Thor served one term on the MN NPS Board of Directors, participated in field trips and symposiums, and attended many meetings.

Before coming to Minnesota, he taught two years in Ohio. In 1990, after 44 years at the University of Minnesota, he retired as a professor in the Department of Plant Pathology. Thor taught about diseases of plants and pesky plants — weeds and poisonous varieties. He taught veterinary medicine students about plants poisonous to animals.

Thor still conducts two-day workshops for the College of Education, teaching elementary school teachers and graduate students about the plants of Minnesota. He has conducted these workshops in Rochester, at the Minnesota Valley Wildlife Refuge Visitor Center, and at the St. Paul campus. He shows teachers plants that are in their schoolyards. During one field trip to several Minneapolis schools, he showed skeptical participants, who thought nothing grew by their buildings, about 100 different plants and trees.

He also volunteers one day every week at the Science Museum of Minnesota, preparing a website, "Boghopper," for secondary math and science teachers.

New baby boom to increase pressure on environment

by Gerry Drewry

A record number of babies — 4,315,000 — were born in the United States in 2007. The previous record was in 1957, at the height of the baby boom. The country's overall population is now nearly double that of the 1950s, but the birth rate has slowed. Then the average mother had about four children; now that average is close to two. Immigration has been a major factor in this baby boom.

Mark Mather, demographer from the Population Reference Bureau, talked about environmental effects of this baby boom. "We already have scarce resources in a lot of areas," he said. "It's going to affect, potentially, our water supply, the quality of our air. Places that are already crowded are probably going to get more crowded in the future."

This outlook makes the mission of the Society even more urgent — "education of the public regarding environmental protection of plant life."

Maps of native plant communities are available

The Minnesota County Biological Survey has prepared maps or provides electronic data about many of the native plant communities in Minnesota. In addition, MCBS has published a report of their work in the Minnesota River Valley.

This report, "Native Plant Communities and Rare Species of the Minnesota River Valley Counties," includes a CD with two series of maps of the region. To obtain a copy, contact MCBS at 651-259-5100, or ecoseervices@dnr.state.mn.us or write to:

Division of Ecological Resources
Minnesota Department of Natural Resources
500 Lafayette Rd., Box 25
St. Paul, MN 55155

To download maps or to see a list of printed maps that are available, go to the DNR website, click on Maps and scroll down to the bottom of the page.

Symposium has net profit of $2,512

by Gerry Drewry

Treasurers Ron and Cathy Huber report that the net proceeds of the April 5 symposium were $2,511.52. Dues totalling $3,361 were the largest source of income from Jan. 1 to June 30, 2008. During that period, income exceeded expenses by $5,448.

The Society has total assets of $27,725, including $8,361 in CDs.

As Scott Milburn wrote in the adjoining column, the MN NPS Board of Directors is discussing the most effective ways in which to use some of this money. Members are invited to send their suggestions to Scott at scott.milburn@mnnps.org

President's column

Conservation beyond Minnesota's 150 years

by Scott Milburn

This year marks an important milestone in the history of Minnesota, as we celebrate 150 years of statehood. In that time, the Minnesota landscape has seen many changes as a result of industry, agriculture, and overall development. While I have only lived in Minnesota the last seven years, I have come to truly appreciate its natural history. There is no greater feeling than traveling around the state, encountering the rich flora. It is easy to focus on the negative aspects of anthropogenic landscape changes, but we need to remember that there is still much around us. In looking at my own appreciation of the Minnesota landscape, I have to consider whether this appreciation would have developed had my profession been different. The reason to evaluate this point is that most people do not have an occupation that requires them to know much about natural history.

This point is important to ponder, because we need to consider how others view the natural world around them. Perhaps we can generalize and state that most folks do care about these things, but they just don't have the knowledge or experience to appreciate them to the fullest. These are the folks that we need to attract. Our approach should be to open the door for these individuals, showing them an entire world they would have ignored except for the occasional weekend camping trip. I feel we have a lot to offer for an organization that is run entirely by volunteers.

As stated in other columns, we need to stick with what works. Programming and field trips are pivotal to the success of the Society, but we need to look at new ways to attract members. It can be debated whether we are too technical as an organization or not technical enough. The programming over the last several years has had a nice balance of pieces that serve to inform the Society very well. Our programming chair, Linda Huhn, has done a nice job of setting up the programs, and I look forward to what is in store this upcoming year. Field trips are another thing we do very well. To those leading field trips, we thank you for doing so. Your efforts are appreciated, especially our field trip coordinator, Ken Arndt. New field trip ideas are always welcomed.

In the upcoming year, the board will be tackling the issue of how to grow while keeping within the mission set forth by the Society founders. We will be looking at such issues as online outreach and the obvious problem of excess funds. We have quite a few opportunities to do some great things with these funds, and we will be sure to share these with you in upcoming newsletters. All of these issues come back to our mission and the issue of conservation.

We need to keep discussing and promoting the issue of conservation as we surpass 150 years. Minnesota has numerous natural resources that are quite special and need to be preserved for the future. What should be the role of our Society in that preservation?

Book review

'Bringing Nature Home'

Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens, by Douglas W. Tallamy, published by Timber Press, Inc., Dec. 2007.
Reviewed by Joel Dunnette, former MN NPS president.

I'm a nature nut, and I enjoy native plants for themselves and for their embodiment of our place in the world. I started liking native plants for the wonder and variety of interesting insects they attract and support. But I now have another reason to plant, maintain and encourage the use of native vegetation.

In *Bringing Nature Home*, Dr. Tallamy explains in an entertaining way how the diversity of our native plants supports a much wider variety and volume of insects than non-native plants. So why should people care about this? Well, although more people enjoy birds than insects, the availability of an abundance and variety of insects is critical to birds as they raise their young. Baby birds eat a lot — and insects are what they mostly eat .

Gardens of exotic flowers are starving the wild birds so many of us love. Yards of mowed grass, with a few non-native shrubs, are no place to raise a bird family.

Native plants have evolved to live with native insects. Each species has its own kinds of insects that live on and with it. These insects not only use native plants, but do so without destroying them. Native plants support production of two to five times more insect food than do non-natives. Non-native flowers are unfamiliar to our insects, and may be "pest free," but what many people call pests are essential to raising young birds. In fact, most insects are not harmful to humans or crops. We assume guilt by association, so most people try to kill nearly every insect they see. This harms the birds we love!

If we want a world filled with wonder and a variety of creatures, and we continue to take up nearly all productive land with our houses and shopping malls, then we need to provide the native plants that are essential for the survival of the species we value.

This book is full of useful information, but is also fun to read. Dr. Tallamy is an entomologist who truly loves nature, and clearly communicates that love. If you care about birds even a little, you will enjoy reading this book.

Volunteers are needed at SNAs

Would you like to help a Scientific and Natural Area? The Minnesota DNR uses volunteers for site management work, including collecting seeds, planting seedlings and controlling exotic species. Volunteers also take photographs, write articles and do other tasks.

MN NPS has "adopted" Grey Cloud Dunes SNA, but members are encouraged to help at any SNA. Most workdays are Saturdays, from 10 a.m. to 2 p.m. The next scheduled workdays are at Lost Valley Prairie SNA Aug. 23 and Sept. 27, and at Hastings Sand Coulee SNA Sept. 27.

For additional information, read the newsletter on the volunteer section of the DNR website, www.dnr.state.mn.us/snas/index.html or call 651-259-5249.

Walking in Thoreau's paths

More than 60 people "Walked with Thoreau" in Red Wing May 24. They retraced Thoreau's exploration of Barn Bluff and located many of the plants and flowers he recorded in his journals and letters. The bluff towers over the Mississippi River. This field trip ws sponsored by the Anderson Center in Red Wing. Photo by Ken Arndt.

Plant Lore

By Thor Kommedahl

What is bluebead lily?

Bluebead lily, also known as corn lily, is *Clintonia borealis* in the lily family.

How did it get its names?

Bluebead lily is named for its round, bright, steel-blue berries. Its leaves resemble corn leaves. *Clintonia* is named after DeWitt Clinton (1769-1828) who wrote books on natural history, was responsible for the construction of the Erie Canal, and was governor of New York. *Borealis* comes from a Greek word meaning "of the north."

Where does the plant grow?

It is native to Minnesota among other northern states and occurs throughout the state in cool, moist woods and wooded bogs, in open shade.

What does the plant look like?

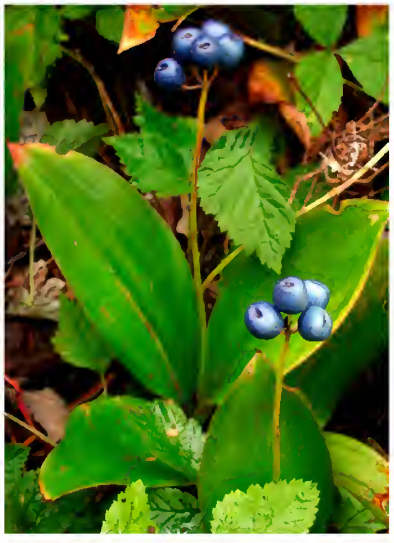
It is a perennial spreading by rhizomes, from 6 to 16 inches tall, with two or three basal leaves. The bell-like flowers are pale yellow in umbels, three to eight on a leafless stalk. Flowers appear in May and June, but steel-blue berries are prominent late summer to fall. Parallel veins are conspicuous in leaves

Has it any medicinal or edible uses?

American Indians applied fresh poulticed leaves to burns, sores, bruises, and rabid-dog bites. Roots contain *diosgenin* (plant steroid used in synthesis of cortisone and other steroid products). Very young leaves have been eaten as a potherb and fresh in a salad. The berries are tasteless. Though reported as mildly poisonous, this has not been confirmed.

Is it a garden plant?

It has been cultivated in moist, shady, woodsy places and propagated by division of rhizomes or by planting seeds.



Clintonia borealis *flowers, berries. Both photos were taken by Peter Dziuk.*

Society memberships will be due in January

MN NPS membership renewals are due in January, not in October as in past years. When the Society's board of directors voted in January to change to a calendar year, they extended current memberships by three months.

A membership form for renewals and new members will be included in the next issue of the *Minnesota Plant Press.*

Events planned on Labor Day weekend at Kilen Woods State Park

Join Nancy Sather, Minnesota County Biological Survey ecologist, for a series of Sesquicentennial natural history events at Kilen Woods State Park on Labor Day weekend. The park is north of Lakefield in Jackson County.

Activities will include forest and prairie hikes, pioneer crafts and evening presentations about landscape history and rare plants of the Des Moines River Valley. Come the day before or stay an extra day and help the DNR with prairie bush clover monitoring in the park.

For additional information, check the DNR Parks website at www.dnr.state.mn.us/state_parks and go to the three-month events calendar. To volunteer with bush clover, send an e-mail to: nancy.sather@dnr.state.mn.us

Clean water tour shows native plants

Native plant installations that protect water quality are featured in the second annual Shoreview Green Community Awards Tour, from 12:30 to 5 p.m. Aug. 2 and 3.

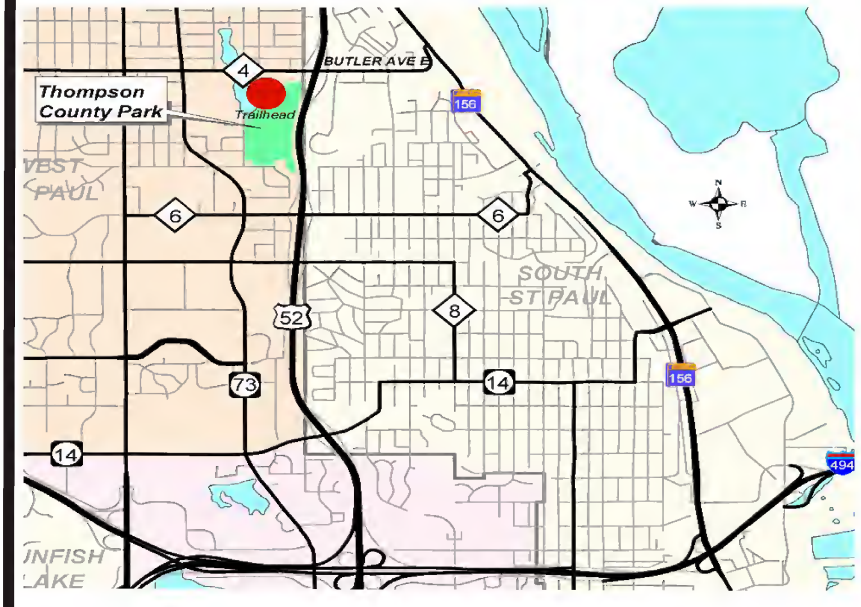
This free, self-guided tour of residential properties includes shoreline buffers that prevent lakeshore erosion, plus rain and habitat gardens that beautify yards while infiltrating storm runoff.

Properties are in Shoreview and the Grass Lake watershed portion of Roseville. Maps are available at the Shoreview City Hall and Community Center and online at www.ci.shoreview.mn.us. For more information, call 651-483-3935. The tour is sponsored by the Shoreview Environmental Quality Committee, with assistance from the Sierra Club North Star Chapter.

Minnesota Native Plant Society
P.O. Box 20401
Bloomington, MN 55420

Summer 2008

Thompson County Park:
360 Butler Ave East, West St. Paul, MN 55118



Directions:
Take MN Hwy. 52 to the Butler Ave. E. exit in West St. Paul.
Go west on Butler 0.2 miles to Stassen Lane.
Go south on Stassen Lane to Thompson County Park.

Minnesota Plant Press

The Minnesota Native Plant Society Newsletter

Volume 27 Number 5 **Fall 2008**

Monthly meetings

Thompson Park Center/Dakota Lodge
Thompson County Park
360 Butler Ave. E.,
West St. Paul, MN 55118
651-552-7559 (kitchen)

Programs

The Minnesota Native Plant Society meets the first Thursday in October, November, December, February, March, April, May, and June. Check the website for more program information.

6 p.m. — Social period

7 – 9 p.m. — Program, society business

Nov. 6: "Relationship between Native Aquatic Plant Communities and Water Quality/ Aquatic Life: What Three Rivers Park District Is Doing to Promote Natives and Minimize Exotics," by Randy Lehr, senior manager of water resources, Three Rivers Park District; **Seed exchange**.

Dec. 4: "Trees and Shrubs of Minnesota," by Welby Smith, botanist, MN DNR; **Plant-of-the-Month:** *Gymnocladus dioica* (Kentucky coffee tree). **Book sale, signing.**

Feb. 5: Speaker and **Plant-of-the-Month** to be announced.

MN NPS website

For current information about MN NPS field trips, meetings, and other events, check the website: www.mnnps.org

Red Saltwort is found in two new state locations

by Scott Milburn

Red saltwort, *Salicornia rubra,* is one of the more unusual plants belonging to our flora and is quite the attention-getter to those having botanical interests. It is an annual that is a member of the goosefoot family (*Chenopodiaceae).* Typical of members of this family, the flowers are not showy, so as not to distract from the distinctive appearance of this species. It is a succulent species that is segmented and turns red as the growing season progresses. *(See photo on page 3.)*

The species is generally described as found in the Great Plains and having an affinity for saline habitats. Its habitats in Minnesota are described as wet saline prairie and mud flat saline subtype communities, usually forming dense patches. Up until 2007, this species had only been documented in three western Minnesota counties and was so uncommon that it is listed as threatened.

I had the opportunity to see this plant last year in southern Kittson County, so I had a good search image for this species in both color and growth pattern. While heading up north on Interstate 94 this summer, I ended up in stop-and-go traffic near Rodgers. Trying to keep my mind off the subject of traffic, I began to examine the highway median. As traffic picked back up, I thought I was seeing patches of *Salicornia rubra,* along with *Suaeda calceoliformis*.

On my next trip up this same route, I ran into traffic again. This time, however, I was able to confirm what I had seen earlier and made a collection. A few weeks later, another unusual occurrence of this species was found off of Interstate 35 in southern St. Louis County by Otto Gockman. This was growing in habitat similar to the population near Rodgers.

These two new populations are far from previously documented populations, so the question is, how did these populations get there?

It is likely that the salting of highways is creating the appropriate saline habitat required by this species. Perhaps we need to look at the salt source for further answers.

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Native plants may help honey bees

The population of honey bees has been declining for 20 years. The triple problems of disease, mites and Colony Collapse Disorder helped cause 35 percent of bee colonies in the United States to die last winter alone.

Research at the University of Minnesota Bee Lab suggests that native plants along roadsides could help increase bee populations.

Farmers depend on honey bees for crop pollination, but the bees do not feed on corn or soybeans. One solution may be increasing the number of flowers available for bees to feed on, Entomology Professor Maria Spivak said.

Urban sprawl, large single-crop areas, and golf courses have decreased these flowers, she said. "We need to add more pollination corridors — crop borders of flowers, roadsides of flowers, golf courses with bee flowers, gardens for bees." She cautioned that insecticides should not be used in these pollination corridors.

Spivak and her lab are studying ways to make bees healthy, focusing on using their natural behaviors. "Minnesota Hygenic" bees, bred by the Bee Lab, are one answer. These bees detect and remove bees in the egg, larva, and pupa states that are infected with certain diseases before they emerge from the honeycomb cells, preventing the diseases from spreading. Minnesota Hygenic bees are now available for beekeepers throughout the United States.

The researchers are also studying propolis, a tree resin collected by bees to seal their hives. Michael Simone, an entomology graduate student, said that this resin has antimicrobial properties and may prevent diseases in the hives. It is used by humans in Japan, Brazil and other countries.

A new Bee Lab is being designed. It is to be used for bee research, teaching and outreach. It would be located near the future Bell Museum of Natural History site, at the corner of Larpenteur and Cleveland avenues in St. Paul. Funding has not been secured, but it is being sought.

Minnesota Native Plant Society's purpose

(Abbreviated from the bylaws)

This organization is exclusively organized and operated for educational and scientific purposes, including the following.

1. Conservation of all native plants.
2. Continuing education of all members in the plant sciences.
3. Education of the public regarding environmental protection of plant life.
4. Encouragement of research and publications on plants native to Minnesota.
5. Study of legislation on Minnesota flora, vegetation, ecosytems.
6. Preservation of special plants, plant communities, and scientific and natural areas.
7. Cooperation in programs concerned with the ecology of natural resources and scenic features.
8. Fellowship with all persons interested in native plants through meetings, lectures, workshops, and field trips.

MN NPS Board of Directors

President: Scott Milburn, scott.milburn@mnnps.org

Vice President: Shirley Mah Kooyman, shirley.mah.kooyman@mnnps.org

Secretary: Position open

Ken Arndt, board member, field trip chair, ken.arndt@mnnps.org

Peter Dziuk, board member, peter.dziuk@mnnps.org

Beth Nixon, board member, conservation committee chair, beth.nixon@mnnps.org

Erika Rowe, board member, erika.rowe@mnnps.org

Russ Schaffenberg, board member, russ.schaffenberg@mnnps.org

Board member: open

Treasurer: Ron and Cathy Huber, ron.huber@mnnps.org

Linda Huhn, program coordinator, 612-374-1435

Listserv Coordinator: Charles Umbanhowar, ceumb@stolaf.edu

Field Trips: fieldtrips.mnnps@mnnps.org

Memberships: memberships.mnnps@mnnps.org; 651-739-4323

Historian-Archives: Roy Robison, historian-archives.mnnps@mnnps.org

Technical or membership inquiries: contact.mnnps@mnnps.org

***Minnesota Plant Press* Editor: Gerry Drewry,** 651-463-8006; plantpress.mnnps@mnnps.org

Reminder:

Do not take plants from the wild. It is against the law to take plants from public property. Enjoy them where they are. Plants can be taken from private property only with the permission of the property owner.

Red Saltwort

Salicornia rubra* (Red saltwort). *See article on page 1. Photo by Scott Milburn.

Black spruce: a crop or a key ecological component?

by Elizabeth Nixon, MN NPS Conservation Committee chair

Popular components of winter decorations are the growing tips of black spruce trees. They are frequently wreathed in tiny white lights and can be found in numerous public places and private homes.

Yes, I admit to the cuteness of this décor, but I am reluctant to use this horticultural product. I would rather imagine black spruce growing in a native peat bog than being managed as a crop, and, as I see it, every acre of cut spruce tips is an acre that could be left in a natural state.

The State of Minnesota licenses the cutting of black spruce tips. Bachman's says so right up front on its website. Some lawn care services advertise black spruce tips but make no mention of the licensing requirements.

An organization by the name of SmartWood (a program of the Rainforest Alliance) performs certification audits on forestry sites harvested for black spruce tips.

The DNR reported on the industry in 2003, saying that harvest is from low productivity stands on public lands, on wet sites when the ground is unfrozen, and that demand is highly cyclical.

Please consider your winter decorations needs carefully and consider to what extent black spruce tips should be part of them. Visit the DNR website to learn more, and make your own conclusions about the sustainability of the harvest and the tradeoffs that are made.

President's column

by Scott Milburn

With autumn here, a new year of programming has begun. We will continue our efforts to educate and inform Society members. Planning is underway for our monthly programming for the entire year, but I would especially like to point out the upcoming December meeting with lifetime member Welby Smith. He will be presenting on the topic of his soon-to-be-released book, *Trees and Shrubs of Minnesota*. We are anticipating selling the book at this meeting, and we hope we get a great turnout.

In terms of board news, the board voted at our last meeting to provide funding for two microscopes for the Bell Museum of Natural History. These scopes will be housed at the herbarium and will be available for public use. I encourage our members to take advantage of the opportunity.

I would also like to point out that we have new membership coordinators, Cathy and Ron Huber. They are replacing David Johnson, who has served as the membership coordinator for a number of years. We thank David for his efforts, and we are happy the Hubers have taken over this important task.

There are other changes currently underway as well. Daniel Jones and Sean Jergens are stepping down from the board after each serving over three years. The board will be electing replacements to serve out the duration of their terms, and we thank the two of them for their time and efforts.

In other news, everyone must be taken aback by recent economic developments. We don't have a good grasp on how the markets will fare, with much to worry about in a declining economy. A great concern of mine is that at a time like this, our natural resources take a back seat, as everyone has to do more with less. However, we do have an opportunity to do something with the proposed constitutional amendment on the ballot this year in Minnesota. The Clean Water, Land and Legacy Amendment will appear on the ballot. The amendment seeks to provide dedicated funding to, in part, protect our natural resources. I encourage our members to further examine this amendment by visiting www.yesformn.org for more details.

There are other actions folks can take to support natural resources. We, as an organization, need to encourage non-members to explore Minnesota, anything from learning the native flora in their own town to understanding the uniqueness of the Minnesota landscape. I hope that in future years, our group as a whole can foster such exploring, but for the time being, I ask you to share your interests with those around you.

Canoeing in Weaver Bottoms

by Ken Arndt

On a warm Saturday, Aug. 2, the MN NPS held a field trip to Weaver Bottoms in southeastern Minnesota. It was led by St. Paul District Corps of Engineers Senior Ecologist Steve Eggers. Several years ago, Steve led a similar trip to the bottoms for the Society, and he wanted to take us back down there again.

This was to be a hot day in the low to mid 90s with humidity, so being closer to the water seemed to be a good remedy for beating the heat. Several determined field trip participants decided to venture south to the heart of the bluff lands of Minnesota to take in the many spectacular features of the area.

Steve Eggers discusses an aquatic plant before participants start canoeing.

Everyone met that morning at the USFWS boat landing off of Highway 61 just north of the town of Weaver. Once we unloaded our canoes and gear for the day, Steve had us gather around a picnic table to go over many of the plants we would be seeing in the bottoms. It was good to review these plants ahead of time, so when we got out in the bottoms we were already familiar with much of what was under and around us.

From the boat landing, we maneuvered out into the bottom toward the sea of American lotuses *(Nelumbo lutea)* that we could see were in full bloom.

Off in the distance to the east, looking toward Wisconsin, you could see a horizon of creamy yellow flowers held above giant round, green leaves. It felt like we were in a tropical setting with the heat, humidity and the lush vegetation all around us. As we got closer to the lotuses, we soon realized just how many there were, as they now completely surrounded us.

Throughout the day Steve would gather us all together and show us the many interesting emergent, submergent, and floating aquatic vegetation, and tell us about the management that has taken place here over the years.

Apparently in 2005 and briefly in 2006, the Corps of Engineers, MN DNR, and several other agencies worked together to allow the bottoms to be drawn down in an effort to improve the habitat for plants, fish and other wildlife. Nearly 1,000 acres of mudflats were exposed, which allowed many different aquatic plants to establish.

After having lunch in our canoes where the Zumbro River flows into the bottoms, we made our way back through the lotuses for one last round before coming out of the water for the day. Since we were in our canoes the whole time, several of us were happy to be back on land to stretch once again.

I think I can speak for everyone that day in that we all enjoyed the amazing sights of the many thousands of American lotuses in bloom with 400-foot-tall bluffs as their backdrop. Thanks, Steve, for taking us back to Weaver Bottoms.

American lotuses* (Nelumbo lutea) *blooming in Weaver Bottoms. A canoe with a field-trip participant is at upper left. Photos by Ken Arndt.

Can spurge hawkmoth help control invasive leafy spurge?

by Ron Huber

In August 2005, MN NPS member Dianne Plunkett Latham photographed a colorful larva on invasive leafy spurge in Bredesen Park, Edina. It proved to be a spurge hawkmoth. The following month, similar larvae were photographed in Minneapolis on leafy spurge along I-35W at Stinson Blvd. They are black with red and white dots and a bright red stripe along the back.

Additional Minnesota records are summarized here. John Luhman at the Department of Agriculture confirms records for Ottertail County and Scott County, and Robert Dana of the Department of Natural Resources has added observations from Clay County. On July 1, 2008, John Lundeen brought a final instar larva to his sister, Cathy Huber. He found the larva behind the building where he works in Eden Prairie. The larva seemed restless, so it was put in a jar with fresh dirt, and the larva pupated a day or two later. It emerged as a fresh adult on July 25.

R. W. Hodges reported in 1971 that the spurge hawkmoth, *Hyles euphorbiae,* had been introduced from Europe in an attempt to control leafy spurge and other range euphorbs in western Canada. The latest publication by J. P. Tuttle, in 2007, gives an excellent summary of the recent and brief history of this hawkmoth in the U.S. and Canada, as follows:

" In the mid-1960s, this hawkmoth was released at numerous Canadian sites from Ontario westward. All of the early releases were unsuccessful in establishing the moth. Finally, in 1967, a release in Ontario took hold. Subsequent generations from that site were used in future Canadian releases, plus an introduction at Chestertown, New York. By 1983, the Ontario site had an estimated larval population in excess of one million. These larvae had thrived on cypress spurge, *Euphorbia cyparissias*, but they failed when introduced on leafy spurge, *E. esula*, in Montana in 1966.

"Then, larvae from Hungary were introduced in Montana in 1974 and began to take hold. Thirty years later, the larvae were estimated to be in the millions and had spread out in a 15-mile radius from the original release. Amazingly, however, the spurge continues to thrive!"

While the ability of the hawkmoth to control leafy spurge remains to be demonstrated, maybe it will offer a "one-two punch" in conjunction with the introduced flea beetle, *Aphthona lacertosa*.

Special thanks go to Dianne Plunkett Latham for submitting the wonderful larval photo for identification, and to John Luhman and Robert Dana for sharing their records.

The adult photo was taken by Bruce Erickson, Fitzpatrick chair of palaeontology, Science Museum of Minnesota.

Roles of streams and vegetation are focus of StreamLab

How do rivers and vegetation affect each other? That question is being studied at the University of Minnesota's new Outdoor StreamLab. The lab, which is located at 2 Third Ave. S.E., Minneapolis, opened in mid-September..

Researchers have diverted Mississippi River water to create a meandering stream on a grassy riverbank. The new brook is open to both the elements and to experimental control.

Topics studied will include the ecological roles of streams, flood control, and stream restoration. One project underway examines how vegetation affects the flow of streams and the retention of flood water.

"Understanding how rivers work can help us make smart decisions about how and where and whether to develop," said Anne Lightbody, a research associate at St. Anthony Falls Laboratory and manager of the Outdoor StreamLab.

She cites a problem at Uvas Creek, Calif. "They tried to turn it from a braided stream to a meandering one. The next spring, it flooded and reverted. People didn't take 'what the river wanted to do' into account."

Another project is to study how vegetation affects the flow of streams and the retention of flood water.

Trout streams are an example of the need to understand ecological relationships. "Trout streams must be cold," she said. "If trees along the banks are cut, there goes the shade, and the water starts to warm up."

Not in my backyard, or yours either!

by Bonnie Harper-Lore, restoration ecologist, Federal Highway Administration. This is an abstract of her talk at the Oct. 2, 2008 MN NPS meeting.

After our Purple Loosestrife Task Force shepherded a bill through the Minnesota Legislature in the mid '80s, I felt like we had stopped invasive plants in their tracks.

My new job in Washington put me at the table with federal agencies, ready to unite to do something similar on a national level. In 1994, 16 agencies signed a memo of understanding of cooperation on the issue of invasive plants. By 1999, we wrote an executive order (EO13112) on invasives that called for a national plan and coordinated action.

So imagine my surprise when I discovered garlic mustard in my own backyard a few years ago. Not only had all our efforts not stopped the spread of invasive plants nationally, we had not been effective locally.

Why should you care?

The reasons are many. Begin with the fact that next to loss of habitat, the invasiveness of nonnative plants is the second biggest reason for plant extinction in the nation. Every day some 4,600 new acres are impacted by invasives. These invasions have ecological and economical impacts. Some $123 billion dollars are lost annually to invasive control, crop losses, forage decline, ranch failures and more (Pimental, et al, 2004). The ecological costs of monocultures, habitat loss, wetland function, etc. are less easy to quantify. We cannot afford either kind of loss.

What can we do?

An invasive species is defined as an alien species whose introduction does or is likely to cause economic harm or harm to human health. (EO13112). Each state has a different noxious weed law and weed list. Very few weeds listed in the United States are native.

Most fit the definition of invasive species. Of course, not planting them in the first place is essential. The planting of kudzu in the 1930s by the U.S. Department of Agriculture demonstrates what mistakes can be made, if we do not examine the consequences of quick solutions. Kudzu is found throughout the eastern states and is moving northward.

Like all plants, it has the ability to continue to adapt. It is now found in Northern Illinois. The key reason it is not being controlled in southern states is the prohibitive cost of controlling millions of infested acres. Our only hope is to contain it and stop it on sight!

What else can Minnesotans do?

Vigilance will be essential. Be the first in your neighborhood to spot new invaders, including ailanthus, star thistle, common teasel, Scotch thistle, hydrilla, yellow flag iris, or kudzu. Report the invasion to the Department of Agriculture and the Department of Natural Resources, both of which have responsibility. Native Plant Society members can volunteer to educate city and county managers and crews about weeds. Schools, neighborhoods, and developers would benefit from your help. Review local ordinances, state legislation, and seek partnerships to benefit your own backyard, your community, and your state.

Engage your neighborhood in a buckthorn clearing effort or other partnership. Educate homeowners with booklets like *Why Should I Care about Invasive Plants*? (from MIPN.org) Inspire children to act like the kids from Bailey Elementary in 1998 who raised and released purple loosestrife beetles.

And most importantly, take care of your own backyard. Remove invasive plants and report new intruders. More invasive plants, animals, insects and diseases are headed our way. It is predicted that climate change will increase invasive species. Together, we can protect not only our own backyards, but Minnesota as well.

Annual seed exchange to be held in November

The annual native plant seed exchange will be held following the program at the Nov. 6 meeting.

Seeds should be gathered from your yard or property. Pack the seeds in small envelopes, ready for distribution. Do not bring bulk seeds. Mark each envelope with the plant's name (common and scientific if possible), habitat, including the county where it was harvested, and your name.

Bring your seeds to the front room of the lodge before the meeting. Dave Crawford is again in charge of the seed exchange. He and several volunteers will arrange the seeds, making it easy to select some you would like to grow.

When the exchange begins, those persons who brought seeds will have the first opportunity to choose some to take home. A few minutes later, the exchange will be open to everyone.

Plant Lore

by Thor Kommedahl

What is shinleaf?

Shinleaf is *Pyrola elliptica* in the shinleaf family *(Pyrolaceae),* but recent research places *Pyrola* in the wintergreen family (*Ericaceae*). Six species of *Pyrola* are native to Minnesota, but *P. elliptica* is most common.

How did it get its names?

Pyrola means like a pear leaf, and *elliptica* refers to the leaf shape. It is called shinleaf because the leaves were used as a plaster applied to bruised shins and other sores and wounds.

Where do these plants grow?

In Minnesota, shinleaf is most abundant east of the Mississippi River, in damp, rich woods, often under conifers.

What does the plant look like?

All *Pyrola* species have only basal leaves that persist through winter. Plants are 5-10 inch-tall perennials with scaly rhizomes. Leaves are thin and not shiny, and the leaf blade is longer than its petiole. Nodding, fragrant, white to greenish flowers are borne on racemes; have long, curving pistils; are insect pollinated; and appear summer into fall.

Pyrola elliptica, *photo by Peter Dziuk.*

Does it have medicinal or poisonous properties?

The analgesic properties of leaves account for its use as treatment for bruises and sores. The American Indians gargled leaf tea for sore throats and canker sores. Root tea was a tonic. Leaves contain about eight flavonoids (known for antioxident activity). It is neither edible nor poisonous

Has it any economic or horticultural uses?

No. Although sometimes transplanted to wild gardens, plants do not thrive in the usual garden soil.

CO_2 level affects weeds

Climate change is strengthening weeds, including kudzu. Read Chapter 2.3.2 of the federal SAP agricultural report 4.3 at www.climatescience.gov/Library

Minnesota Native Plant Society
Member Registration

Name _____

Address _____

_____

City _____ **State** _____ **Zip** _____

Phone (work) _____ **(home)** _____ **E-mail newsletter? Yes**___ **No**____

E-mail _____

Membership category (New _____ Renewal _____)

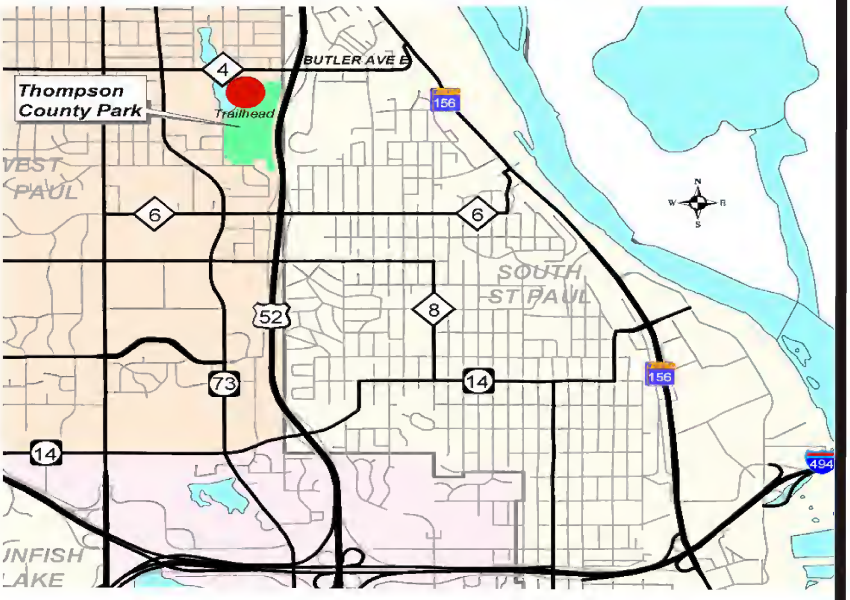
$15 Individual
$15 Family (2 or more people at same address)
$8 Student (full time)
$8 Senior (over 62 or retired)
$20 Institution

The membership year starts Jan. 1. Please fill in this form and circle the appropriate membership category. Make your check payable to the Minnesota Native Plant Society. Bring the completed form and your check to the next meeting, or mail them to the Minnesota Native Plant Society, P.O. Box 20401, Bloomington, MN 55420.

Minnesota Native Plant Society
P.O. Box 20401
Bloomington, MN 55420

Fall 2008

Thompson County Park:
360 Butler Ave East, West St. Paul, MN 55118



Directions:
Take MN Hwy. 52 to the Butler Ave. E. exit in West St. Paul.
Go west on Butler 0.2 miles to Stassen Lane.
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